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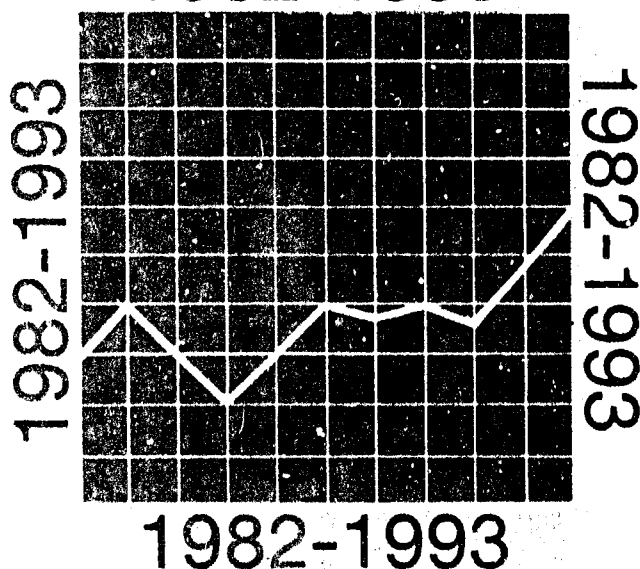
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FAA-APO-82-2

# FAA Aviation Forecasts

FISCAL YEARS  
1982-1993



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15. Supplementary Notes			
<p>16. Abstract</p> <p>This report contains the Fiscal Years 1982 to 1993 Federal Aviation Administration (FAA) forecasts of aviation activity at FAA facilities. These include airports with FAA control towers, air route traffic control centers, and flight service stations. Detailed forecasts were made for the four major users of the national aviation system: air carriers, air taxi/commuters, general aviation and the military. The forecasts have been prepared to meet the budget and planning needs of the constituent units of the FAA and to provide information that can be used by state and local authorities, by the aviation industry and the general public.</p> <p>The overall outlook for the forecast period is for moderate economic growth, relatively stable real fuel prices, and decreasing inflation. Based upon these assumptions, aviation activity is forecast to increase by Fiscal Year 1993 by 79 percent at towered airports (commuters, 80 percent; air carriers, 23 percent; general aviation, 96 percent; military, 0 percent), 48 percent at air route traffic control centers (commuters, 93 percent; air carriers, 25 percent; general aviation, 92 percent; military, -2 percent), and 70 percent in flight services performed. Hours flown by general aviation is forecast to increase 67 percent and helicopter hours flown 112 percent. Scheduled domestic revenue passenger miles (RPM) are forecast to increase 86 percent, with air carrier RPMs forecast to increase by 85 percent and commuter RPMs forecast to increase by 231 percent.</p>			
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# Preface



The Federal Aviation Administration forecasts of aviation activity and other selected statistics are developed annually for use in the Agency's planning and decision making. Aviation activity under the control of FAA towered airports, Air Route Traffic Control Centers, and the services provided by the Flight Service Stations are forecast for the several user groups—certificated route air carriers, commuter airlines and air taxis, general aviation, and the military. Also presented are forecasts based on three alternative scenarios: economic expansion, Wharton Econometric Model and stagflation. The alternative scenario forecasts provide a range around the baseline forecasts for planning purposes both within the FAA as well as for other users of the FAA forecasts.

FAA aviation forecasts employ projections of key economic variables provided by the Executive Office of the President, Office of Management and Budget. These projections are combined with projections of aviation variables and professional judgement on the probabilities and consequences of events that affect aviation. The combination is used as input to the econometric models from which the forecasts are generated. Consequently, forecast users are urged to consider the assumptions presented with the baseline forecasts and the alternative scenarios for insight into what effects deviations from the expected state of the general economy will have on aviation.

*Harvey B. Safeer*  
**HARVEY SAFEER, Director**  
 Office of Aviation Policy and Plans

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# Table of Contents

	<u>Page</u>
Preface . . . . .	1
Acknowledgements . . . . .	11
Table of Contents . . . . .	111
List of Figures . . . . .	iv
List of Tables . . . . .	v
 Chapter I: Executive Summary . . . . .	 1
Forecast Summary . . . . .	3
 Chapter II: Baseline Forecasts . . . . .	 7
Economic Overview . . . . .	8
Forecast Assumptions . . . . .	9
Aviation Activity Forecasts . . . . .	11
General Aviation: Changing Composition of Activity . . . . .	 11
Forecast . . . . .	13
Air Carriers: A Sustained Period of Growth . . . . .	15
Assumptions . . . . .	18
Forecast . . . . .	22
Commuter Airlines: Development of a Stable Route Structure . . . . .	 25
Assumptions . . . . .	26
Forecast . . . . .	26
FAA Workload Forecasts . . . . .	27
Air Traffic Control: Accommodating Growth . . . . .	27
Assumptions . . . . .	29
Forecast . . . . .	29
 Chapter III: Alternative Scenarios . . . . .	 31
 Chapter IV: Year-By-Year Data For FAA Aviation Forecasts, Fiscal Years 1982-1993 . . . . .	 35
 Glossary of Terms . . . . .	 61

# List of Figures

<u>Figure</u>	<u>Page</u>
Gross National Product and Disposable Personal Income . . .	9
Consumer Price Index and Oil and Gas Deflator . . . . .	10
Active General Aviation Aircraft . . . . .	14
Active Turboprop and Turbojet Aircraft . . . . .	15
Air Carrier Fuel Prices . . . . .	16
Average Passenger Trip Length . . . . .	19
Revenue Per Passenger Mile . . . . .	20
Passenger Load Factor . . . . .	21
Average Seats Per Aircraft . . . . .	22
United States Certificated Route Air Carrier	
Domestic Revenue Passenger Enplanements . . . . .	23
United States Certificated Route Air Carrier	
Domestic Revenue Passenger Miles . . . . .	24
Commuter Enplanements . . . . .	27
Total Operations at Airports with FAA Traffic	
Control Service . . . . .	29
IFR Aircraft Handled . . . . .	30

# List of Tables

<u>Table</u>	<u>Page</u>
FAA Forecast Economic Assumptions . . . . .	3
Aviation Activity Forecasts . . . . .	4
FAA Workload Forecasts . . . . .	5
General Aviation Aircraft Production . . . . .	11
Growth in Avionics Equipment by Aircraft Type 1977-1980 . . . . .	12
Comparison of Alternative Scenario Forecasts	
Economic Variables FY 1993 . . . . .	33
Comparison of Alternative Scenario Forecasts	
Aviation Activity FY 1993 . . . . .	33
Comparison of Alternative Scenario Forecasts	
FAA Workload FY 1993 . . . . .	34
1. United States Certificated Route Air Carrier	
Scheduled Passenger Traffic . . . . .	37
2. U.S. Air Cargo Traffic All Services at	
U.S. Airports . . . . .	38
3. Total Airborne Hours, U.S. Commercial Airline	
Large Jet Aircraft by Aircraft Type . . . . .	39
4. Total Large Jet Aircraft in U.S. Commercial	
Airline Service by Aircraft Type . . . . .	40
5. Commuter Airlines Traffic and Operations . . . . .	41
6. Estimated Active General Aviation Aircraft by	
Type of Aircraft . . . . .	42
7. Estimated Active General Aviation Aircraft by	
FAA Region . . . . .	43
8. Estimated Hours Flown in General Aviation by	
Type of Aircraft . . . . .	44
9. Estimated Fuel Consumed by General Aviation by	
Type of Aircraft . . . . .	45
10. Estimated Fuel Consumed by United States	
Domestic Civil Aviation . . . . .	46
11. Total Itinerant and Local Aircraft Operations at	
Airports with FAA Traffic Control Service . . . . .	47
12. Itinerant Aircraft Operations at Airports with	
FAA Traffic Control Service . . . . .	48
13. Local Aircraft Operations at Airports with FAA	
Traffic Control Service . . . . .	49
14. Instrument Operations at Airports with FAA	
Traffic Control Service . . . . .	50
15. Non-IFR Instrument Operations . . . . .	51
16. IFR Aircraft Handled FAA Air Route Traffic	
Control Centers . . . . .	52

17.	IFR Departures and Overs FAA Air Route Traffic Control Centers . . . . .	53
18.	Total Flight Services, Pilot Briefs and Flight Plans Originated at FAA Flight Service Stations and Combined Station/Towers . . . . .	54
19.	Aircraft Contacted FAA Flight Service Stations and Combined Station/Towers . . . . .	55
20.	Active Pilots by Type of Certificate . . . . .	56
21.	Active U.S. Military Aircraft in Continental United States 1975-1993 . . . . .	57
22.	Active U.S. Military Aircraft Flying Hours in Continental United States 1976-1993 . . . . .	58
23.	Economic Assumptions Used in FAA Forecasts . . . . .	59
24.	Baseline Air Carrier Assumptions - Domestic Operations . . .	60



CHAPTER 1 EXECUTIVE SUMMARY



**Aviation  
Forecasts**  
Fiscal Years 1982-1993

## CHAPTER 1

### EXECUTIVE SUMMARY

The "Airline Deregulation Act of 1978" signed into law on October 24, 1978, represented the culmination of many years of study, discussion and hard work to forge a major legislative action which would completely change Government-industry relationships developed over 50 years. The Act represented the dramatic beginning of a new era for the American air transportation industry. The President's program for economic recovery will enable the industry to fully exploit their new challenges and opportunities.

In the three years since the Act was passed, considerable changes have occurred in the character of the industry. Patterns of service, route structures and equipment usage are changing in response to conditions in the marketplace and changes in operating costs for air transportation services. As of October 1981, some 37 carriers have been added to the long established list of certificated carriers. Major mergers and acquisitions have occurred and several more are likely. With the proposed early sunset of the Civil Aeronautics Board, realignment of the industry will be expedited to meet the new demands of the marketplace.

The history of aviation has been one of change--change in the legislative framework, in technology, in operations, in procedures and in economic conditions. Notwithstanding all of these changes, the long-term trend for the industry has been growth. In this sense, the current changes stemming from economic deregulation are no different from previous changes in the challenges that are presented or in the opportunities for growth that continue to exist. Air travel, whether in a large jet transport or a small private plane, is no longer the novelty or adventure that it once was. The opportunity aviation offers for high speed, long distance travel is a part of everyday life. The safety, comfort and convenience it provides are taken for granted by most users. American aviation has evolved to the point where it now serves a mass market.

Change is underway within general aviation as it is among all sectors of aviation. Total factory billings in 1981 by general aviation aircraft manufacturers exceeded levels achieved in 1980. However, the number of units sold continues below the rate obtained in 1980, the discrepancy explained in part by increasing sales of the larger and more sophisticated aircraft.

Cost and resource problems are becoming increasingly critical throughout the aviation community. Many of the commercial aircraft have reached the point where they will require replacement. The problem is not so much age, but the need for quieter and more fuel efficient operation. The capital needs of the major airlines for the decade of the 80's are estimated at between 60 and 90 billion dollars. These estimates recognize that in the mid-1980's the airline industry will be entering a major equipment replacement cycle comparable to the replacement of piston engine aircraft with jet transports.

In August 1981, it was necessary for the FAA to institute limited constraints in order to assure a safe and efficient operation of the system under conditions of limited air traffic controller staffing at certain FAA facilities. These short-term constraints on the system are reflected in the forecasts.

#### Forecast Summary

The forecasts presented herein are based on improved models of general aviation and air carrier activities used in previous forecasts and on forecasts of economic variables as contained in the table below.

FAA FORECAST ECONOMIC ASSUMPTIONS  
(fiscal years)

Economic Variables	Historical			Forecast			Percent Average Annual Growth				
	1975	1980	1981	1982	1983	1993	75/80	80/81	81/82	82/83	81/93
Gross National Product (billions 1972\$)	1,227.1	1,481.9	1,507.1	1,501.5	1,570.9	2,251.0	3.8	1.7	(0.4)	4.6	3.4
Disp. Pers. Income (billions 1972\$)	862.5	1,016.4	1,034.8	1,062.2	1,100.6	1,530.1	3.3	1.8	2.7	3.6	3.3
Cons. Price Index (CY 1967=100)	155.2	239.8	266.3	287.5	305.7	464.1	9.1	11.1	8.0	6.3	4.7
Oil & Gas Deflator (CY 1972=100)	150.9	324.8	367.2	375.7	383.8	637.9	16.6	13.1	2.3	2.2	4.7

Source: Executive Office of the President, Office of Management and Budget, January 1982.

Aviation activity is expected to experience its third straight year of losses in 1982, reflecting the current recession which began in the fourth quarter of 1981 and the short-term constraints placed on the system. Overall, however, the long-term outlook is for a relatively strong growth rate during the forecast period.

#### Aviation Activity

Domestic air carrier revenue passenger miles are expected to increase at a 5.3 percent annual growth rate during the 1982-1993 time period, although 1982 activity is expected to decline slightly below 1981 levels. A more modest 1.8 percent annual increase in air carrier aircraft operations is anticipated over the same time period. The higher growth in revenue passenger miles relative to operations reflects a continuation of the shift to larger average seating capacity for air carrier aircraft and longer average stage lengths.

Air carrier passenger enplanements are expected to rebound in 1983 as the general economy begins its recovery phase and the National Airspace System returns to full capacity. The carriers will also begin to phase in more of the fuel efficient aircraft that are now on order. The growth rate of air carrier enplanements will be lower during the forecast period than that achieved in the 1975 to 1980 period, 4.6 percent versus 8.5 percent.

In 1982, the commuter carriers are expected to enplane 13.0 million passengers, 4.9 percent of all fare paying passengers in scheduled domestic air service. By 1993, these carriers are expected to carry 34.8 million passengers and account for 7.2 percent of all domestic passenger enplanements.

AVIATION ACTIVITY FORECASTS  
(fiscal years)

Aviation Activity	Historical			Forecast			Percent Average Annual Growth				
	1975	1980	1981	1982	1983	1993	75/80	80/81	81/82	82/83	81/93
<b>Air Carrier, Domestic</b>											
Rev. Pass. Enps. (millions)	184.9	278.3	264.5	255.9	269.0	455.5	8.5	(5.0)	(3.2)	5.1	4.6
Rev. Pass. Miles (billions)	127.7	203.7	197.6	196.8	207.9	365.8	9.8	(3.0)	(0.4)	5.6	5.3
<b>Commuter Carriers</b>											
Rev. Pass. Enps. (millions)	6.4	13.1	12.9	13.0	14.9	34.8	15.4	(1.5)	(0.8)	14.6	8.6
Rev. Pass. Miles (billions)	0.7	1.7	1.7	1.7	2.0	5.6	20.2	(2.0)	(1.6)	16.7	10.5
<b>Fleet (thousands)</b>											
Air Carrier	2.1	2.4	2.5	2.5	2.7	3.1	2.5	3.3	2.7	4.9	1.9
General Aviation	161.0	210.3	211.0	214.0	218.1	332.9	5.5	0.3	1.4	1.9	3.9
<b>Hours Flown (millions)</b>											
Air Carrier	5.6	6.7	6.7	6.7	6.9	8.4	3.6	-	(0.6)	3.6	1.9
General Aviation	31.9	41.6	42.7	43.9	45.0	71.5	5.5	2.6	2.8	2.5	4.4

Source: CAB, FAA data. FAA forecasts.

Nationally, commuter aircraft operations are expected to almost double the 1981 estimated volume of 4.4 million operations by 1993. As the larger air carriers continue to rationalize their route systems, commuter airlines will move into the markets abandoned by these carriers, performing more operations with smaller aircraft than those flown by the larger air carriers. In addition, they are expected to develop new markets in smaller communities which show potential for supporting regular scheduled service.

Increasing business use of general aviation is reflected in the changing character of the fleet. The more expensive and sophisticated turbine powered part of the fixed wing fleet is expected to grow by 121 percent between 1981 and 1993. The total fleet (79.8 percent single engine piston aircraft in 1981) will grow by only 52 percent. Fixed wing turbine powered aircraft represented 3.4 percent of the fleet in 1981. By 1993 the percentage will increase to 4.7 percent.

## FAA Workload

Aviation activity at FAA facilities will decline in the early part of the forecast period. However, demand for FAA operational services is anticipated to increase during most of the forecast period as a result of resumption of strong growth in aviation operations. Total aircraft operations at FAA towered airports are forecast to increase to 110.4 million in 1993, a 5.0 percent annual growth above the 61.6 million operations in 1981.

Increasing use of avionics by the commuter airlines and by general aviation will contribute most of the growth in instrument operations at FAA towered airports. Instrument operations are expected to increase from 37.2 million operations in 1981 to 55.4 million in 1993, a 3.4 percent annual growth rate.

FAA WORKLOAD FORECASTS  
(millions)

FAA Workload Measures	Historical			Forecast			Percent Average Annual Growth				
	1975	1980	1981	1982	1983	1993	75/80	80/81	81/82	82/83	81/93
<b>Aircraft Operations</b>											
Air Carrier	9.4	10.1	9.5	8.7	9.1	11.7	1.4	(5.9)	( 8.4)	4.6	1.8
Air Taxi & Commuter	2.7	4.6	4.9	4.9	5.4	8.8	11.2	6.5	-	10.2	5.2
General Aviation	44.2	48.9	44.6	36.5	42.7	87.4	2.0	(8.8)	(18.2)	17.0	5.7
Military	2.7	2.5	2.5	2.5	2.5	2.5	(1.4)	-	-	-	-
<b>Total</b>	<b>58.9</b>	<b>66.1</b>	<b>61.6</b>	<b>52.6</b>	<b>59.7</b>	<b>110.4</b>	<b>2.3</b>	<b>(6.8)</b>	<b>(14.6)</b>	<b>13.5</b>	<b>5.0</b>
<b>Instrument Operations</b>											
Air Carrier	9.5	10.6	10.2	9.1	9.6	12.3	2.2	(3.8)	(10.8)	5.5	1.6
Air Taxi & Commuter	1.9	4.1	4.6	4.6	5.1	8.8	16.6	12.2	-	10.9	5.5
General Aviation	10.7	19.3	18.5	16.4	20.2	30.4	12.5	(4.1)	(11.3)	23.2	4.2
Military	3.9	4.1	3.9	3.9	3.9	3.9	1.0	(4.9)	-	-	-
<b>Total</b>	<b>26.1</b>	<b>38.2</b>	<b>37.2</b>	<b>34.0</b>	<b>38.8</b>	<b>55.4</b>	<b>7.9</b>	<b>(2.6)</b>	<b>( 8.6)</b>	<b>14.1</b>	<b>3.4</b>
<b>IFR Aircraft Handled</b>											
Air Carrier	12.4	13.9	12.9	11.8	12.4	16.1	2.3	(7.2)	( 8.5)	5.1	1.9
Air Taxi & Commuter	1.3	2.6	2.9	2.9	3.1	5.6	14.9	11.5	-	10.9	5.5
General Aviation	5.5	8.9	8.9	7.7	8.6	17.1	10.1	-	(13.5)	11.7	5.6
Military	4.4	4.7	4.7	4.6	4.6	4.6	1.3	-	( 2.1)	-	(0.2)
<b>Total</b>	<b>23.6</b>	<b>30.1</b>	<b>29.3</b>	<b>27.0</b>	<b>28.7</b>	<b>43.4</b>	<b>5.0</b>	<b>(2.7)</b>	<b>( 7.8)</b>	<b>6.3</b>	<b>3.3</b>
<b>Flight Services</b>											
Pilot Briefs	16.2	18.3	17.7	17.2	18.2	32.6	2.5	(3.3)	( 2.8)	5.8	5.2
Flight Plans Originated	8.0	9.0	8.8	8.2	8.8	15.6	2.4	(2.2)	( 6.8)	7.3	4.9
Aircraft Contacted	10.0	9.6	9.6	10.2	10.2	10.0	(0.8)	-	6.3	-	0.3
<b>Total</b>	<b>34.2</b>	<b>36.9</b>	<b>36.1</b>	<b>35.6</b>	<b>37.2</b>	<b>58.2</b>	<b>1.9</b>	<b>(2.6)</b>	<b>( 2.2)</b>	<b>4.9</b>	<b>4.5</b>

Source: FAA Data. FAA Forecasts.

The workload at the Air Route Traffic Control Centers is forecast to increase at a 3.3 percent average annual rate between 1981 and 1993. The increased demand will come primarily from the commuters and general aviation. Commuter aircraft handled at the Centers are projected to almost double over the next 12 years.

In summary, aviation activity will experience a decline in 1982 but is then expected to grow faster than the general economy. Aviation will continue to dominate all other transportation modes in the commercial intercity passenger market. Commuter operations and business use of general aviation are expected to experience greater growth than the larger airlines and personal use of general aviation.

CHAPTER 2      BASELINE FORECASTS:



**Aviation  
Forecasts**  
Fiscal Years 1982-1993

## CHAPTER II

### BASELINE FORECASTS

Ever since the Airline Deregulation Act was passed in 1978, aviation and all its components--the manufacturers, the airlines, airports, service providers and Government agencies--have participated in a dynamic transition. Relationships and products that had served aviation well in its regulated years are now being realigned to meet the new demands on the system.

In the three years since deregulation, some 37 carriers have been added to the long established list of certificated carriers. Major mergers or acquisitions have occurred and several others have received Civil Aeronautics Board permission. Significant changes in the route structures of all airlines can be expected to continue for several years. The certificated air carriers and commuters will continue to ground inefficient aircraft and introduce more cost-effective aircraft into their fleets. To help reduce costs, individual carriers will attempt to standardize their fleets by using fewer types of aircraft; however, the mix of aircraft using the Nation's airspace will become more diverse. New carriers will continue to buy used aircraft at depressed prices and provide low price service in selected high density markets.

The character of general aviation will continue to change. An increasing number of people use general aviation to meet demands on their time. These flyers will concentrate their activities at those airports where aviation facilities are most extensive and where groundside services are most convenient.

The official forecasts of aviation activity and FAA workload for the years 1982 to 1993 are discussed below. The baseline forecasts are presented in tabular form in Chapter IV.

#### Economic Overview

During 1981, U.S. oil prices, as measured by the oil and gas deflator, increased by 13 percent. The U.S. consumer price index rose by over 11 percent. The growth in the Nation's output of goods and services slowed considerably from the 5 percent average annual growth rate for the 1975-1979 period. Gross national product, adjusted for inflation, rose by less than 2 percent while real disposable income increased by 1.8 percent.

Although the economy is expected to rebound sharply during the latter half of 1982, a moderate decline in aviation activity is forecast in 1982. Inflation is expected to moderate during this same time period, reflecting a real decline in fuel prices in both 1982 and 1983. This real decline in fuel prices, coupled with strong economic growth in the latter half of 1982, is expected to result in a sharp rebound in aviation activity in 1983.

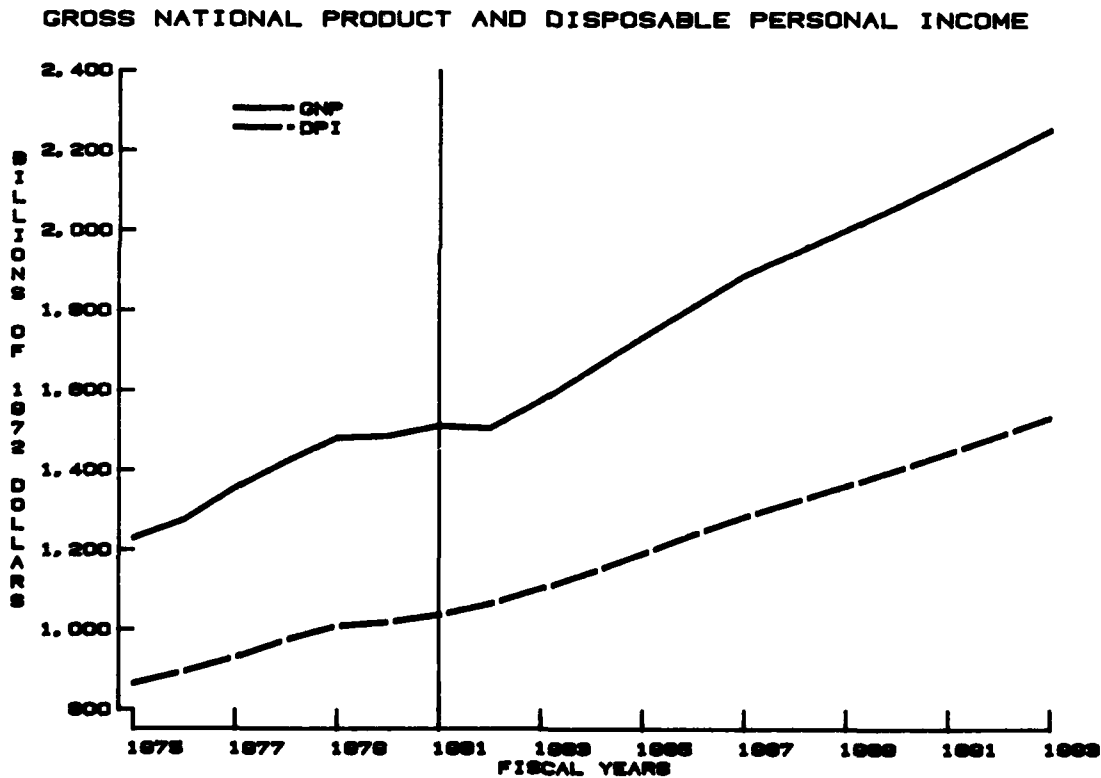


### Forecast Assumptions

The economic scenario used in developing the FAA baseline aviation forecasts was provided by the Executive Office of the President, Office of Management and Budget. The principal series used in the forecasts are presented here. Specific assumptions used in the individual models are discussed in the following pages.

Gross national product is forecast to grow in real terms, i.e., adjusted for inflation, at an average annual rate of 3.4 percent throughout the forecast period. This compares with an average rate of 3.5 percent over the last six years.

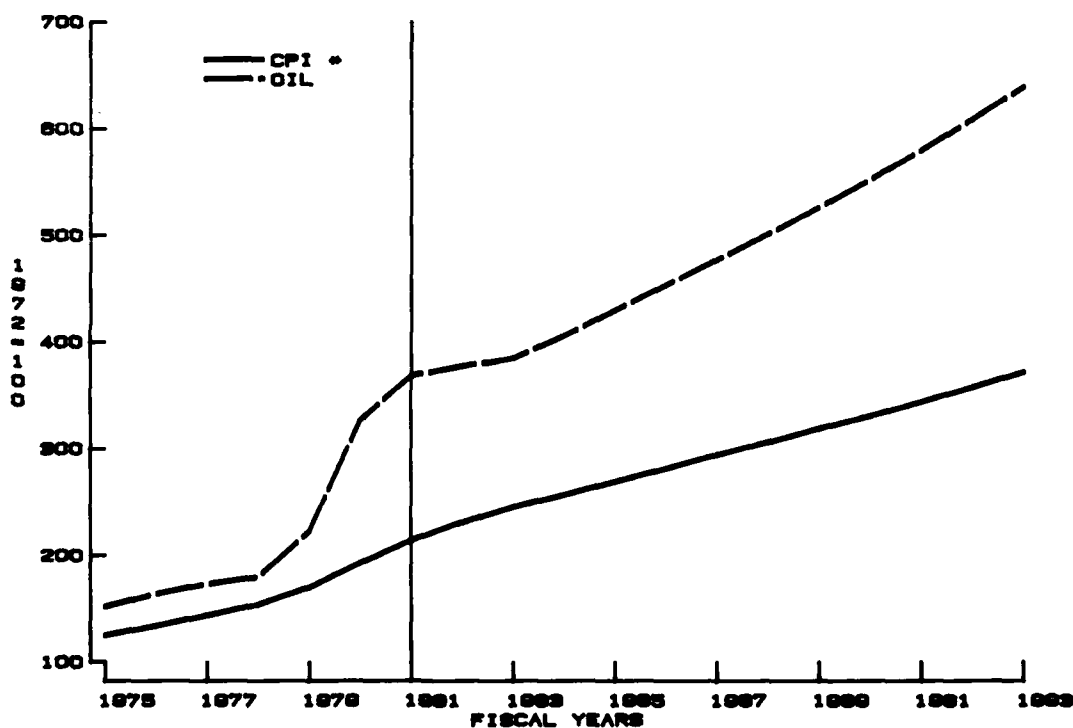
Disposable personal income, in 1972 dollars, is expected to grow at a 3.3 percent annual rate, from \$1,034.8 billion in 1981 to \$1,530.1 billion in 1993. Aided by personal income tax reductions enacted in 1981, disposable income is expected to increase by 2.7 percent in 1982, 3.6 percent in 1983, and 3.8 percent in 1984, further fueling the economy and stimulating aviation activity.



Consumer prices are forecast to continue to rise, but at a rate considerably below the 1979-1981 rate of 11.7 percent. It is assumed that the consumer price index will rise 8.0 percent in 1982 and 6.3 percent in 1983. However, by 1987 the rate of increase is expected to slow to an annual rate of 4 percent and remain at this growth level throughout the remainder of the forecast period.

Fuel prices are forecast to increase by only 74 percent between 1981 and 1993. Following two years of a real decline in fuel prices, real fuel costs are expected to increase at about 1 percent a year beginning in 1984. The FAA baseline forecast assumes the general availability of fuel for aviation.

#### CONSUMER PRICE INDEX AND OIL AND GAS DEFLATOR



SOURCE: EXECUTIVE OFFICE OF THE PRESIDENT, OFFICE OF MANAGEMENT AND BUDGET  
 \* CPI INDEXED TO 1972 FOR PLOTTING PURPOSES

## AVIATION ACTIVITY FORECASTS

### GENERAL AVIATION: Changing Composition of Activity

Trends in the overall economy are creating major changes within general aviation. Over the past several years general aviation has become increasingly important as a means of transportation for business use. Events which have contributed to this are changes in tax legislation, rapid escalation of fuel prices, business dispersion and centralized management, changing air carrier route structures and the cost advantage of general aviation relative to other competing modes of transportation. Evidence for this increase in business use may be drawn from the patterns of growth in the general aviation fleet, aircraft sales, total hours flown, and the pilot population.

#### Fleet Composition and Aircraft Sales

As of January 1, 1981, the general aviation fleet consisted of 211,000 aircraft, representing an annual growth rate of 4.6 percent during the 1975 to 1981 period. During this same period, single-engine piston aircraft increased at a yearly rate of 4.2 percent and the turbine powered aircraft grew at a 11.5 percent rate. The total fleet increased only 0.3 percent in 1981; however, the turbine powered part of the fleet experienced a 7.3 percent increase. While, in the short-term, the growth rate of the fleet will be less than has been experienced during the 1970's, the long-term trend suggests a sustained growth close to historical levels.

Total production of general aviation aircraft (excluding helicopters, balloons, dirigibles, and gliders) declined about 20 percent in 1981. While production of single engine and multi-engine piston aircraft declined significantly, the production of turbo-prop and turbo-jet aircraft increased 19 percent and 15 percent, respectively. Latest industry estimates indicate that 1982 production levels will decline over 13 percent to approximately 8,200 aircraft.

### GENERAL AVIATION AIRCRAFT PRODUCTION

As of January 1	Total	Piston		Turboprop	Turbojet
		Single Engine	Multi- Engine		
1975	14,056	11,439	2,116	305	196
1976	15,449	12,783	2,120	359	187
1977	16,907	14,057	2,195	428	227
1978	17,811	14,398	2,634	548	231
1979	17,048	13,286	2,843	637	282
1980	11,877	8,640	2,116	795	326
1981	9,457	6,608	1,542	918	389

Source: General Aviation Manufacturers Association.

Industry sources indicate that approximately 90 percent of the sales of general aviation jet aircraft are intended for business use. Approximately 80 to 85 percent of the turbo-prop aircraft and about 60 to 70 percent of the multi-engine piston aircraft are purchased for business use. Less than 30 percent of the single engine piston aircraft are sold for business purposes. However, the percentage of single engine piston aircraft sales intended for business use has increased from about 10 percent in 1969 to approximately 25 percent in 1978, while the percentage of single engine aircraft purchased for personal use has declined from 42 percent to 34 percent, and instructional use, from 27 percent to 17 percent during this period.

An indication of the growth in the demand for air traffic control and navigation services by general aviation is the significant growth in the number of aircraft equipped with sophisticated avionics. This trend is most pronounced for piston aircraft and rotorcraft. For example, for the period 1977 through 1980, the piston fleet population grew 19 percent, while the number of aircraft equipped with transponders grew 44 percent, and the number equipped with Instrument Landing System's (ILS) grew 34 percent. Turbojet and turboprop aircraft typically are equipped to make full use of navigation and air traffic control services. The table below shows the growth rates for 4 types of avionics equipment by equipment type as well as the growth in fleet population by aircraft type.

**GROWTH IN AVIONICS EQUIPMENT BY AIRCRAFT TYPE  
1977-1980**

<u>Aircraft Type</u>	<u>Fleet Population Growth Rate</u> %	<u>Avionics Equipment Growth Rates</u>			
		<u>Communications</u> %	<u>Transponders</u> %	<u>ILS</u> %	<u>Navigation</u> %
Piston	19	21	44	34	23
Rotorcraft	32	32	72	98	50
Turboprop*	44	40	40	41	40
Turbojet	36	36	36	39	39

Source: General Aviation Activity and Avionics Survey, FAA.

\*The difference in growth rates between the turboprop fleet and turboprop aircraft equipped with avionics is due to sampling error. Since the differences among the rates are not statistically significant, it can be assumed that all rates are equivalent.

## Hours Flown

The FAA estimate of total general aviation hours flown in FY 1981 was 42.7 million hours. Single-engine piston aircraft accounted for 69 percent of all hours flown, multi-engine aircraft for 16 percent, and turbine powered aircraft for 9 percent. The single-engine piston aircraft hours flown grew less than 2 percent in 1981, while turboprop hours increased 9.5 percent and turbojet hours flown increased 7.7 percent. During the period 1975 through 1981, single-engine piston aircraft hours flown increased at a 4.3 percent rate, turbine powered aircraft hours grew at a 9.9 percent rate, and total hours flown grew at a yearly rate of 5.0 percent.

In 1980, personal and instructional use accounted for 36 percent of all hours flown, and business and executive for approximately 34 percent, compared to 52 percent and 28 percent respectively in 1970. Between 1970 and 1980 the use of general aviation for business grew at a 7 percent rate, personal use grew at a 2 percent rate, while instructional use declined at a 2 percent rate.

## Pilot Population

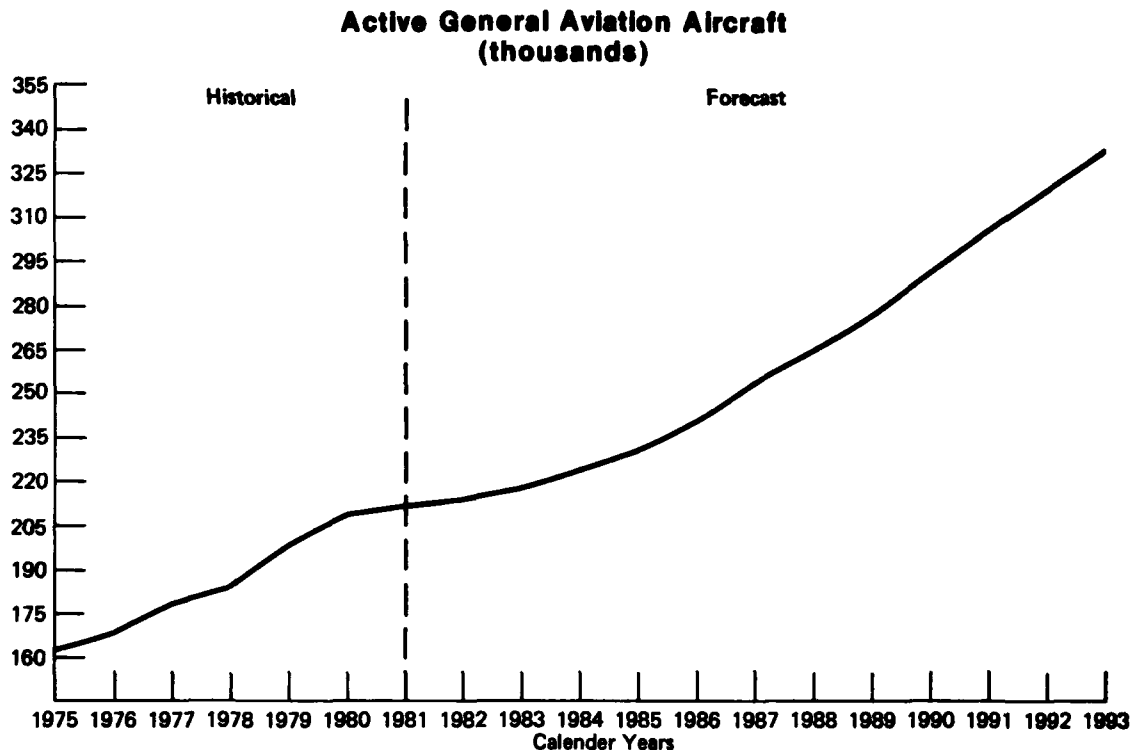
Recent trends within the general aviation pilot population provide further evidence of this sector's changing characteristics. As of January 1, 1981, 42 percent of the licensed pilots possessed an instrument rating compared to 32 percent in 1970. While the total pilot population is growing at a 2 percent annual rate, the number of instrument rated pilots is growing at a 5 percent rate.

Between 1975 and 1978, a period of economic growth and relatively stable real fuel costs, the number of student pilots increased from 177,000 to 205,000. However, this number declined by 5 percent in 1981 and current data indicates a further decline in 1982. This drop is attributable to the relatively high cost of fuel and the economic downturn. Thus, while in the short-run the number of student pilots will remain stable, the long-term trend suggests the number of individuals who want to become pilots will continue to grow at the historical rate.

## Forecast

The short range forecast for general aviation hours flown calls for an increase from 42.7 million hours in 1981 to 43.9 million hours in 1982. Growth over the entire forecast period is expected to average 4.4 percent per year, resulting in an estimated 71.5 million hours flown in 1993.

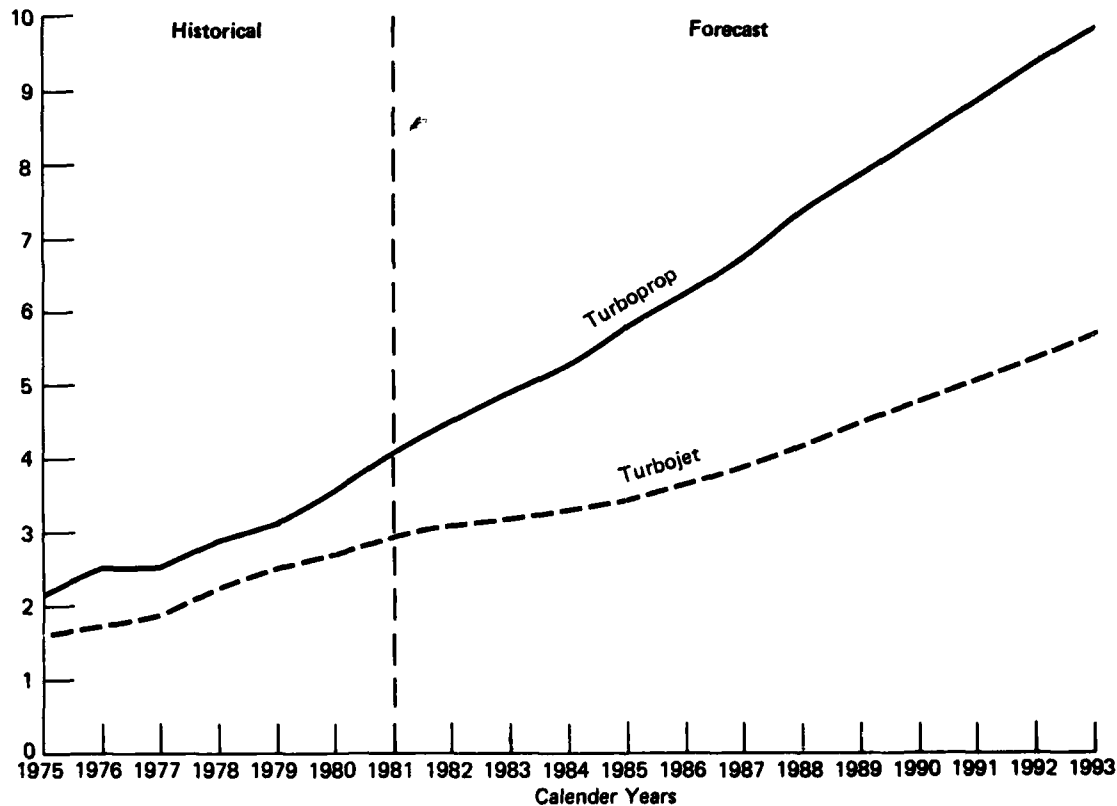
The industry will experience a continuation of slow growth in the general aviation fleet in the 1981-1983 time period. There will be variations in the number of aircraft added to the fleet each year due in part to changes in economic conditions. However, the net addition to the fleet will average approximately 10,000 aircraft per year between 1981 and 1993.



Source: FAA Statistical Handbook of Aviation

The significant trend masked by the large number of single engine piston aircraft in the fleet is the continued growth among turbine powered aircraft. The number of turbine powered aircraft is projected to more than double from 7,100 in 1981 to 15,700 in 1993. These new sophisticated aircraft are expected to make extensive use of FAA provided services.

### Active Turboprop and Turbojet Aircraft (thousands)

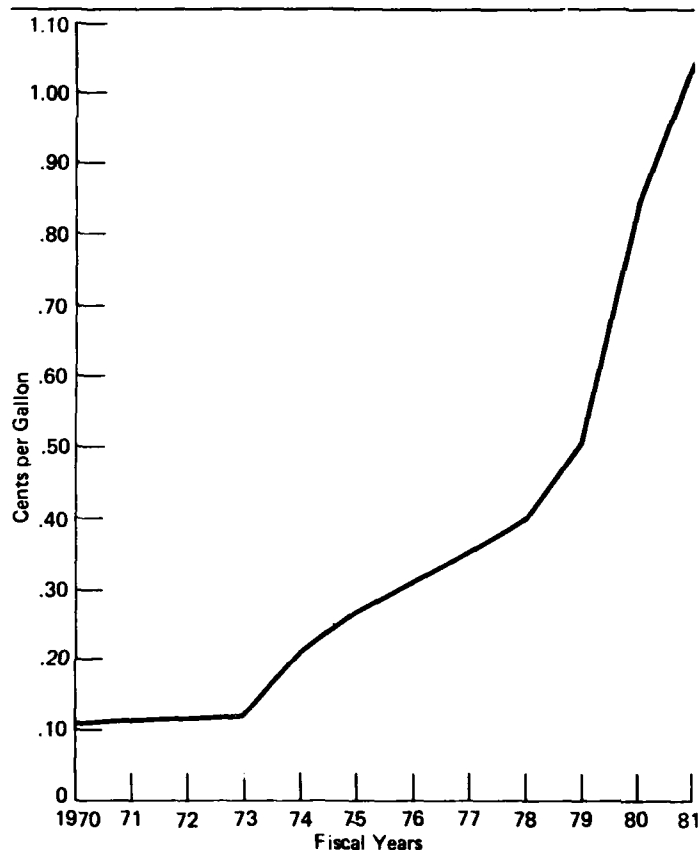


Source: FAA Statistical Handbook of Aviation

### AIR CARRIERS: A Sustained Period of Growth

The period since deregulation has been a time for experimentation and learning for the Nation's air carriers. The air carriers entered new markets, dropped out of unprofitable markets, rationalized their route systems, and experimented with fares. During the 1978-81 time period, the air carrier industry was subjected to a rapid rise in operating costs, due largely to a 153 percent increase in the price of fuel. The domestic air carriers were paying 40.3 cents per gallon at the end of 1978. By September 1981, the price was up to \$1.02 cents per gallon. In 1978, fuel accounted for 19.7 percent of total operating costs. In 1981, the figure was up to 28.9 percent, down slightly from the 1980 figure of 29.1 percent.

### Air Carrier Fuel Prices Domestic Operations



Source: Civil Aeronautics Board

### Cost/Revenue Relationship

The air carriers introduced a variety of discount fares to promote new services established under deregulation and to respond to the new low-cost competition entering established markets. However, operating expenses continued to rise sharply due to higher fuel and labor costs, the costs of introducing new services and general inflation. The carriers petitioned for, and were awarded, increases in basic fare levels of 37 percent in the first three years of deregulation. Yet, revenue increases failed to match the increase in costs.

Compounding these problems, the Nation's basic economic growth slowed throughout 1980-81 and is expected to decline slightly in 1982. Despite an expected upturn in the second half of 1982, air travel will remain at levels below 1981. As a result of this slow economic growth, the domestic trunk airlines incurred operating losses of \$384 million in 1980 and estimated losses of over \$600 million in 1981.



The effect on the financial condition of the industry is illustrated by a comparison of revenue and expense trends for 1980. Operating revenues increased by almost 19 percent over 1979, but operating expenses rose by 20 percent. This negative revenue/cost relationship has continued into 1981 and was made worse by declining traffic demand and load factors.

Domestic airline revenue passenger miles began a general decline in March 1980 that continued unabated throughout 1981. The decline of 3 percent in 1981 would have been greater except for a strong showing by local service carriers and the reporting of San Juan and Virgin Island traffic as domestic beginning January 1, 1981. The domestic trunklines revenue passenger miles, despite the inclusion of San Juan and Virgin Island traffic, declined almost 8 percent in 1981, while the local service carriers reported traffic gains of almost 13 percent.

#### Route Structure

The operating structure of the domestic air carrier industry continued to change markedly in 1980 and 1981. The trunklines, in an effort to develop more profitable and energy efficient route systems, continued to eliminate service on unprofitable and less profitable short-haul, low density routes. At the same time, many of them established new city-pair services and expanded services in existing markets. The local service carriers followed a similar pattern but generally in lower density and shorter distance markets. Former intrastate carriers in California, Texas and Florida continued their expansion into new interstate and international markets in direct competition with established trunk and local service carriers. Similarly, a number of newly established carriers began point-to-point service in a number of high density markets in the Northeast and Midwest, also in direct competition with established carriers.

The net effect of these changes is reflected in the distribution of revenue passenger miles, aircraft miles scheduled, the number of departures offered, and average trip length for each of three carrier groups: domestic trunks, local service carriers, and six carriers certificated since deregulation.\* The trunklines still dominate the U.S. scheduled domestic air carrier industry, but their proportion of passenger miles, aircraft miles and departures has declined substantially while their average passenger trip length has increased significantly. For example, comparing September 1979 and September 1981, the domestic trunk's share of scheduled domestic revenue passenger miles declined from 87.5 percent to 79.1 percent and their share of domestic aircraft miles declined from 79.1 percent to 71.1 percent. Scheduled departures declined from 59.2 to 50.6 percent of total domestic departures during the same period. The trunks average passenger trip length increased from an average of 848 miles in 1979 to 904 miles in 1981.

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\*Includes Air Florida, PSA, Southwest, Midway, New York Air, and People Express.

During this same period, the local service carriers increased their share of scheduled domestic revenue passenger miles from 8.3 percent to 12.2 percent, their share of domestic aircraft miles from 13.2 percent to 17.6 percent, and their share of departures from 24.1 percent to 27.2 percent. The local service carriers' average passenger trip length showed a sharp increase from 375 miles to 449 miles. The 6 carriers certificated since deregulation accounted for 3.9 percent of scheduled domestic passenger miles in September 1981, up from the 2.4 percent share held in September 1979. These carriers also increased their share of scheduled aircraft miles from 1.9 percent to 4.6 percent, their share of departures from 3.7 percent to 6.9 percent, and their average passenger trip length from 337 miles to 354 miles.

These shifts in the distribution of passenger miles, aircraft miles, departures and passenger trip lengths reflect the different approaches of, and the extent to which, the respective carrier groups have responded to changes in the economy and the market entry and exit freedom. Overall, however, these shifts reflect the impact that the entry of new carriers, or deregulation, has had on the domestic trunkline carriers.

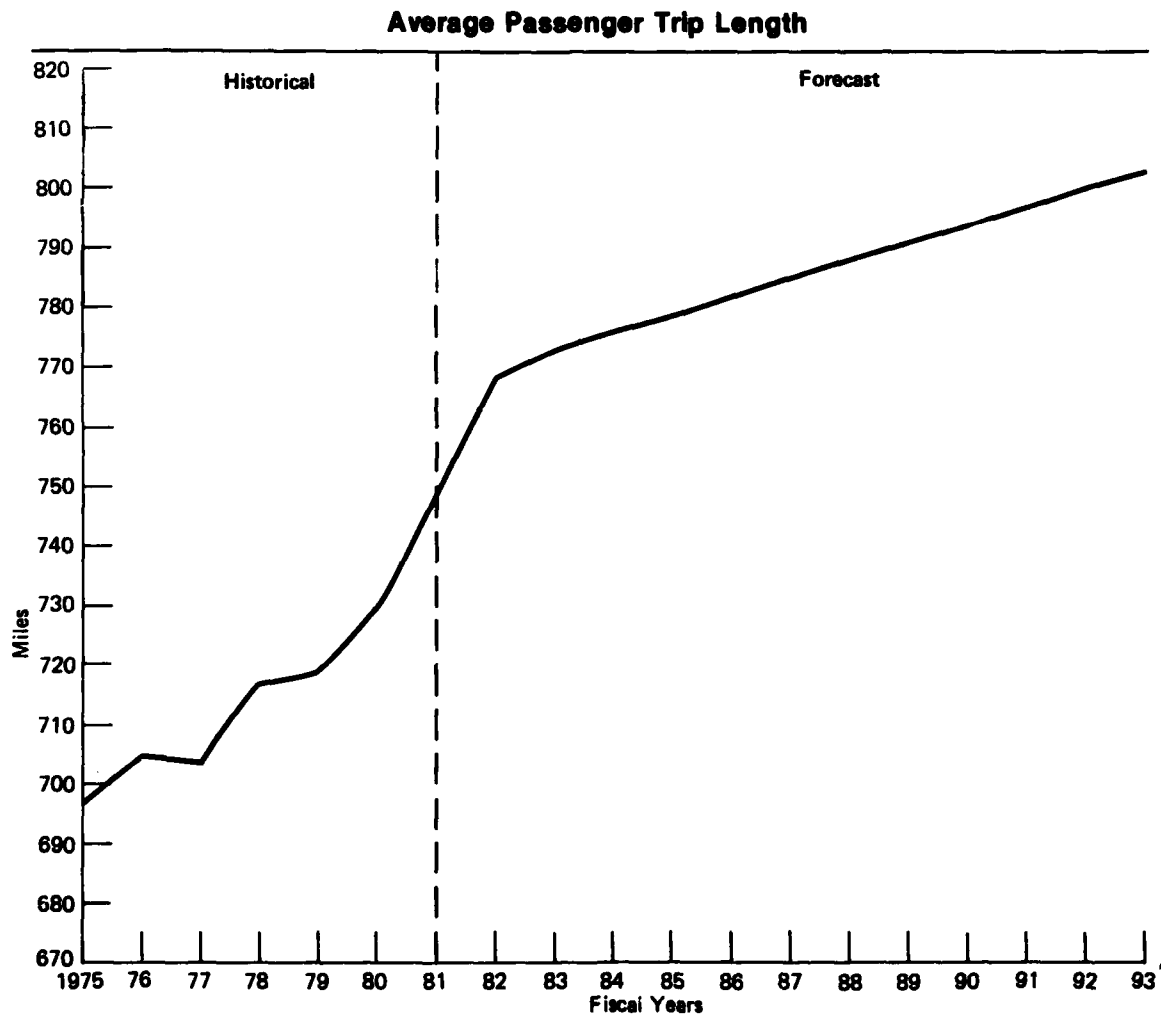
The shifts also reflect the carriers' attempts to best utilize their aircraft fleets in the most fuel efficient and profitable manner. The average seating capacity of both trunk and local service aircraft continued to increase during 1980 and 1981. The trunks' aircraft averaged 149 seats in 1979, 154 in 1980 and 159 in 1981. The locals' aircraft averaged 92 seats in 1979, 99 seats in 1980 and 103 seats in 1981.

The domestic trunks' load factor declined 4.7 points in 1980 to 58.6 percent and another point in 1981 to 57.6 percent. Local service carriers' load factor declined 5.2 points to 54.5 percent in 1980, but increased by 1 point in 1981 to 55.5 percent. The trunks' load factor declines are the result of this segments declining traffic levels in 1980 and 1981. Despite the continuation of strong traffic growth by local service carriers in both 1980 and 1981, capacity increases of nearly 15 percent in 1980 and 10 percent in 1981 caused load factors to decline below 1979 levels.

#### Assumptions for Air Carrier Forecasts

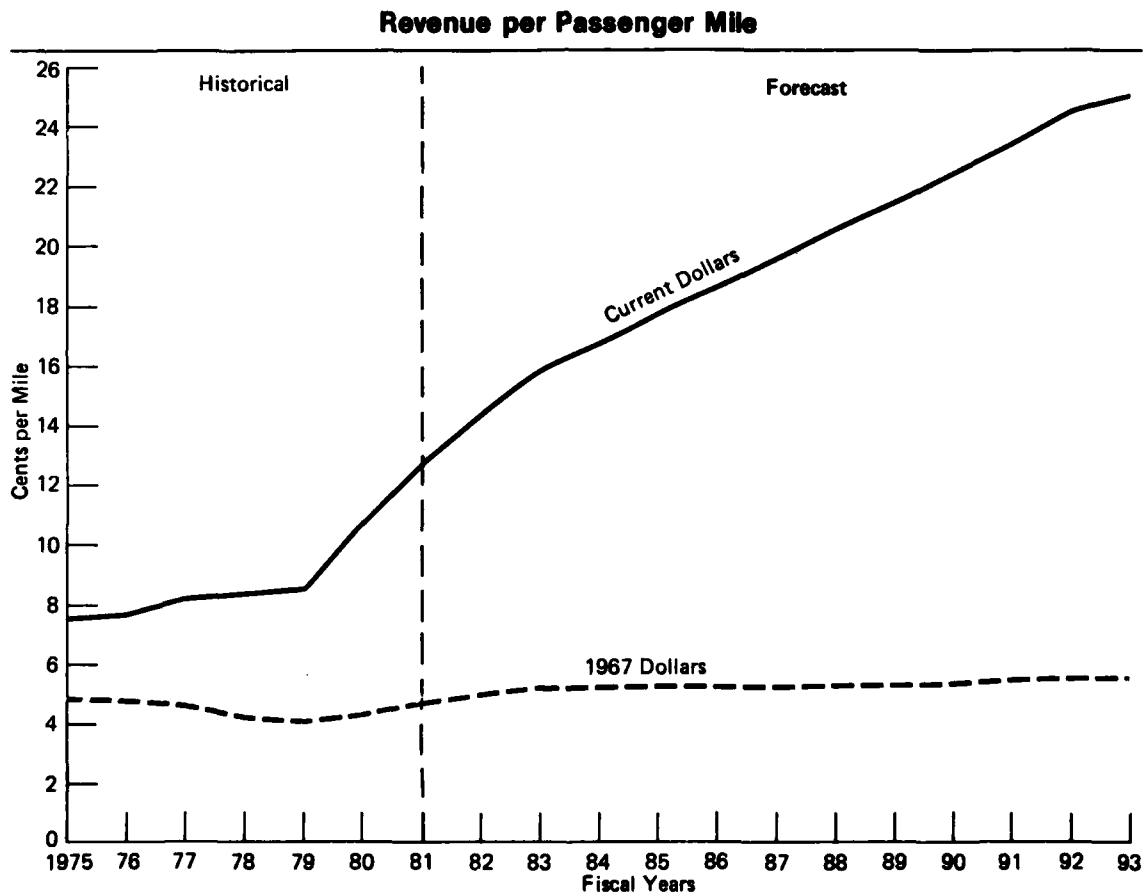
The baseline forecasts of air carrier activity over the next 12 years anticipate that the industry will continue to be affected by the deregulation process for several more years. It is impossible to foresee all of the changes that will occur in the industry in the years ahead, but it is likely that there will be some additional mergers of carriers, that we will see the emergence of several new low-cost airlines, and that one or more carriers may cease operations. On the other hand, the resulting route systems and service patterns available to the traveling public will almost certainly reflect a better balance of service in terms of trip frequencies and costs than would be the case under a more closely regulated system. The carriers will be able to continue their experimentation with new, innovative ways of developing travel markets. Likewise, the carriers will be able to come closer to utilizing their particular fleets of aircraft in the most fuel efficient and profitable manner.

With respect to specific assumptions, it is anticipated that the type of route structure changes evident during the 1979-1981 period will, because of short-term system constraints, accelerate during 1982. The average domestic passenger trip length is expected to increase 28 miles between 1981 and 1984, 20 miles in 1982 alone, as the larger air carriers reduce frequencies or eliminate service on many marginally profitable short- and medium-haul routes. However, it is anticipated that the average trip length will resume its historical growth of two to three miles per year beginning in 1985, increasing to 803 miles in 1993. Based upon the changing structure of the industry, it is felt that an average domestic trip length of 803 miles by 1993 is a reasonable expectation and well within any upper bound.



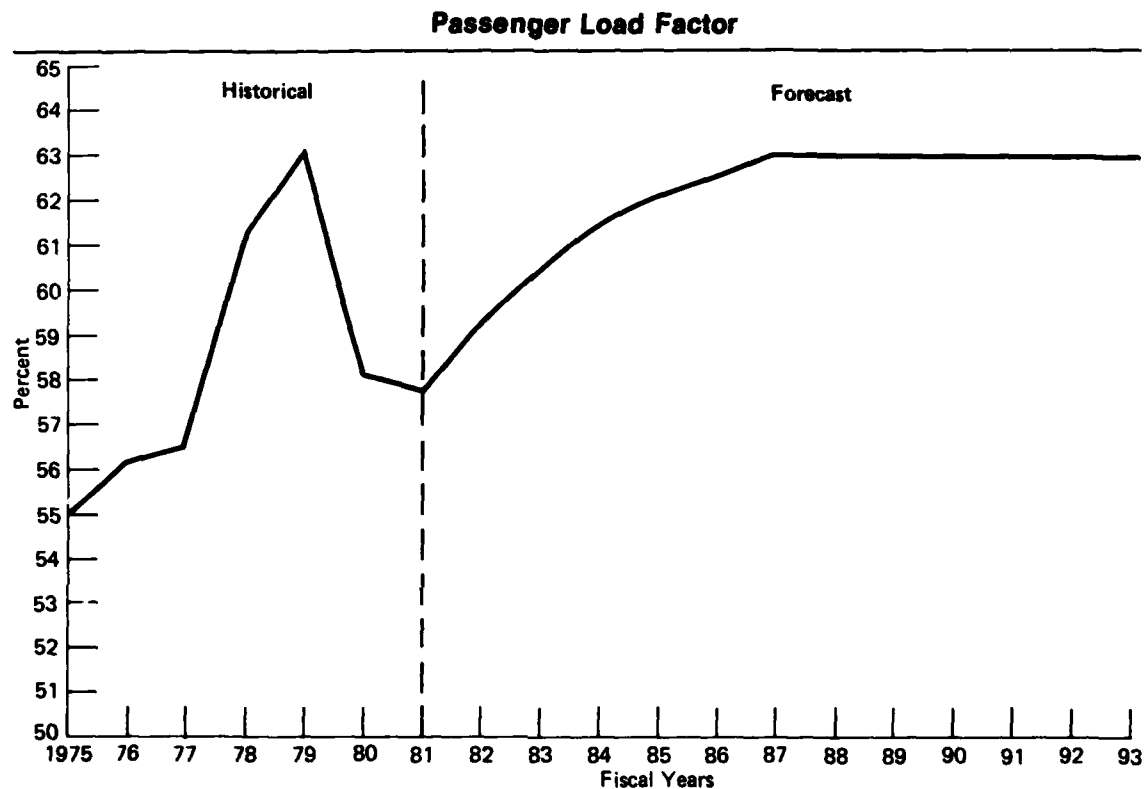
Source: Civil Aeronautics Board

The average revenue received per passenger mile (yield) is forecast to increase by almost 32 percent between 1981 and 1984 as the air carriers eliminate or tighten restrictions on discount fares. Yield assumptions also include an increase in the domestic passenger ticket tax from 5.0 to 8.0 percent, effective July 1982. Between 1984 and 1993, it is anticipated that yield will grow at a more moderate 4.7 percent annual rate. However, after adjusting for inflation, yield is expected to increase by only 0.5 percent annually between 1985 and 1993. For the entire forecast period, yield is expected to grow at an average annual rate of 6 percent in current dollars, but only 1.2 percent in 'real' terms. The significantly lower growth is based on the assumptions of further system optimization, greater market competition, and the introduction of new, larger, more fuel efficient aircraft with lower unit operating costs than today's aircraft.



Source: Civil Aeronautics Board

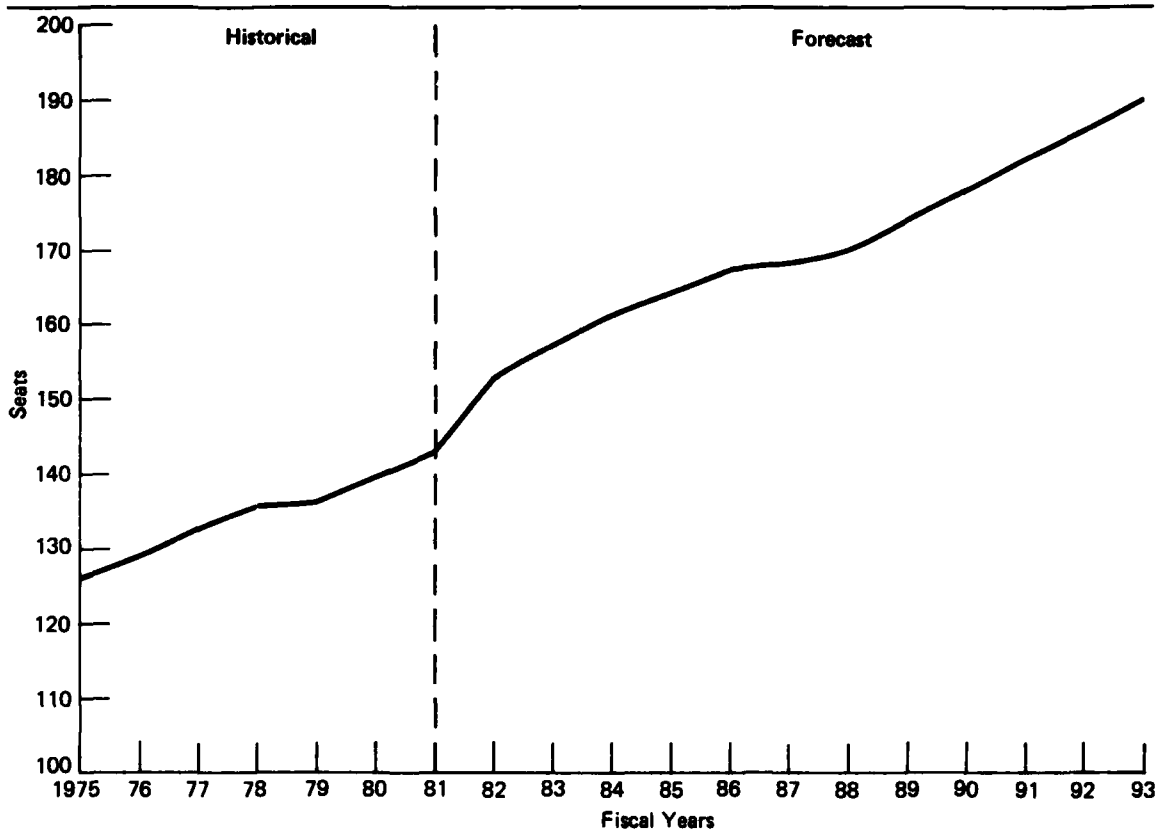
Despite short-term capacity constraints, the load factor is expected to increase to only 59.3 percent in 1982, gradually increasing to 60.5 percent in 1983 and 61.5 percent in 1984. Load factors are then forecast to increase to 63 percent by 1987 and maintain that level throughout the remainder of the forecast period.



Source: Civil Aeronautics Board

The industry is also expected to accelerate its program of replacing older aircraft with quieter, larger capacity, and more fuel efficient aircraft. As a result, the industry's average aircraft seating capacity is forecast to increase by 10 seats in 1982, and then resume the historical growth of three to four seats per year, increasing from 153 seats in 1982 to 190 seats in 1993.

### Average Seats per Aircraft

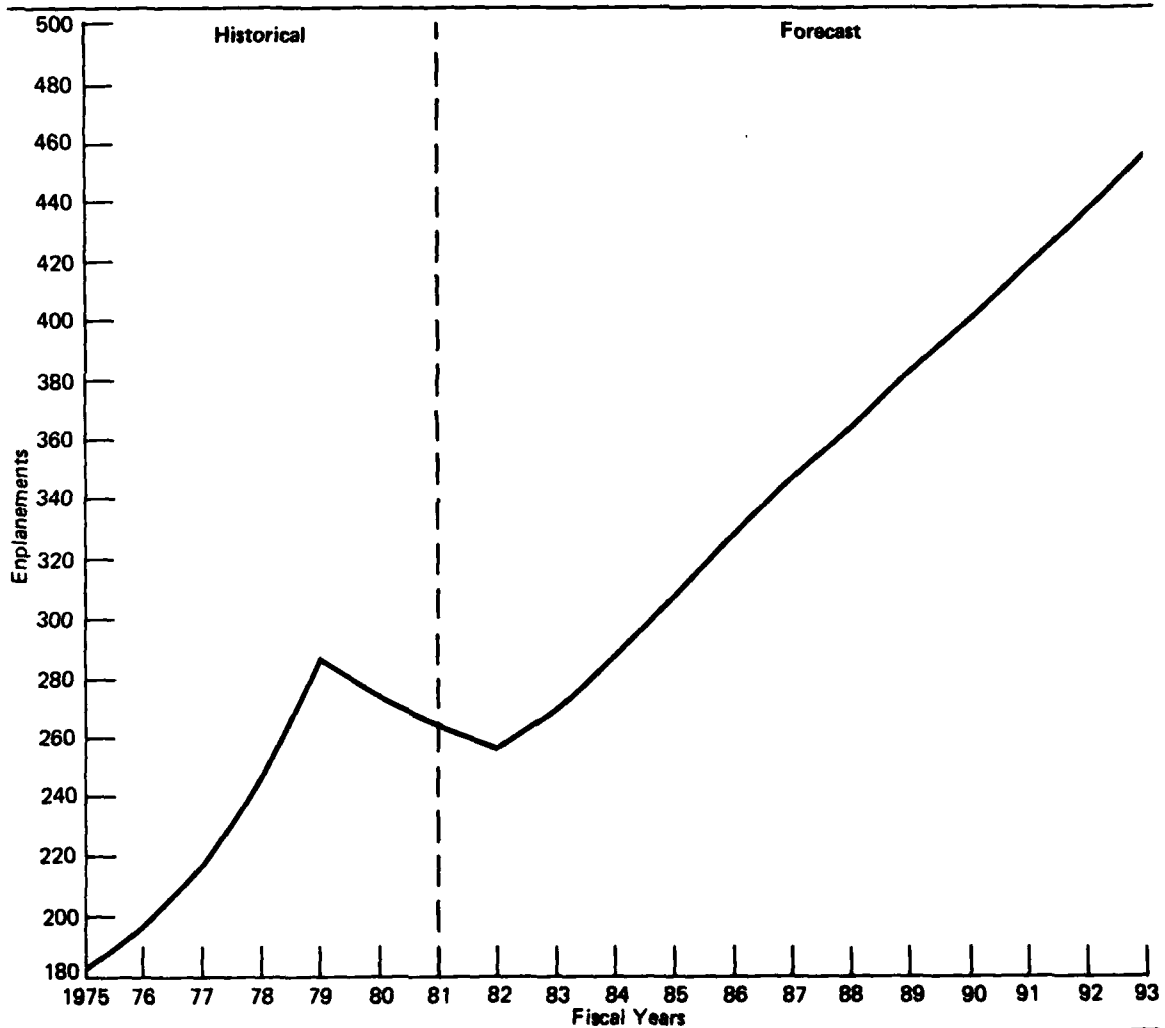


Source: Civil Aeronautics Board

#### Forecast

Air carrier domestic enplanements are expected to decline 3.2 percent in 1982. However, enplanements are forecast to increase 5.1 percent in 1983 and 6.7 percent in 1984, reflecting the upturn in the general economy beginning in the second half of 1982, and a return of the air traffic control system to near normalcy. Over the entire forecast period, growth in enplanements is expected to be strong, increasing at an average annual rate of 4.6 percent between 1981 and 1993 to 455.5 million passengers.

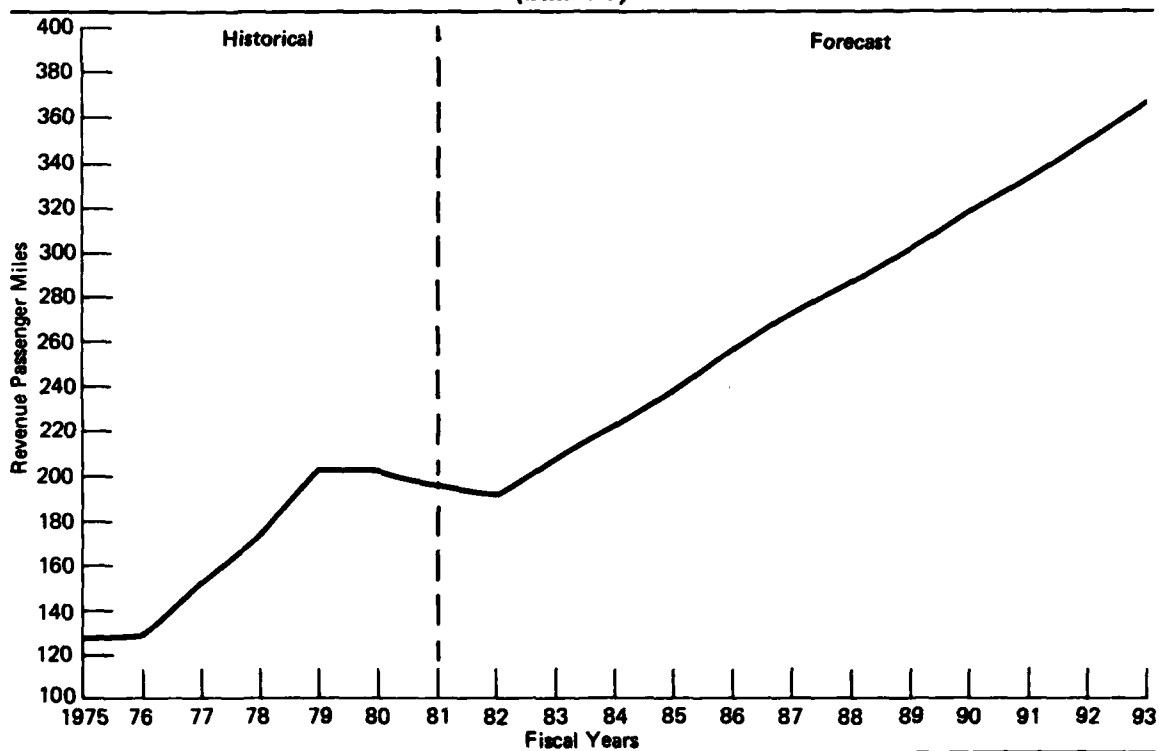
**United States Certificated Route Air Carrier  
Domestic Revenue Passenger Enplanements  
(millions)**



Source: CAB Air Carrier Traffic Statistics

After a marginal decline in 1982, revenue passenger miles are expected to grow at a slightly faster rate than enplanements due to the increase in average trip length. Revenue passenger miles are forecast to increase an average of 5.3 percent per year between 1981 and 1993, to 365.8 billion passenger miles.

**United States Certificated Route Air Carrier  
Domestic Revenue Passenger Miles  
(billions)**



Source: CAB Air Carrier Traffic Statistics

The international portion of U.S. air carrier market is expected to grow at a somewhat slower rate than that projected for the domestic portion. After declining over 7 percent in 1981, due almost entirely to the reclassification of San Juan and Virgin Island traffic as domestic, international revenue passenger miles are expected to increase at an annual rate of 4.7 percent between 1981 and 1993. Enplanements are also expected to increase at an annual rate of 4.7 percent, to 36.7 million in 1993.



## COMMUTER AIRLINES: Development of a Stable Route Structure

Between 1975 and 1980, commuter airlines' passenger enplanements grew at an annual rate of 15.4 percent while revenue passenger miles increased at a 20 percent rate. In 1981, both total commuter enplanements and revenue passenger miles experienced declines of 1.5 percent and 2.0 percent, respectively. Enplanements and passenger miles in the 48 conterminous states declined by 2.6 percent and 3.0 percent, respectively.

The number of commuter carriers has grown very rapidly over the past decade as new carriers were established and air taxi operators received certification for scheduled service. Since deregulation, some 30 commuter carriers had petitioned for, and been awarded, certificated route air carrier status for all or part of their route networks.

### Recognition and Growth

Passage of the Airline Deregulation Act in 1978 may be considered one of the single most important events focusing attention on the commuter airline industry. It raised the maximum number of seats permitted in a commuter aircraft to 56, later increased to 60 by Civil Aeronautics Board regulatory action. For the first time, the Act made these smaller carriers eligible for Federal loan guarantees for aircraft purchases and also extended subsidy qualification to them under the CAB's Essential Air Service Program. While only a small portion of commuter aircraft and markets are supported by these programs, passage of the legislation has contributed to the greater presence of these carriers in their markets.

In the past several years, the larger trunkline air carriers have begun to rationalize their route structures so as to increase aircraft utilization and fuel efficiency. The result has been that the commuters have been able to move into those markets that were no longer served by the larger jet aircraft of the trunk and local service carriers. In most cases, the affected communities have gained from commuter replacement of the air carriers. In general, where replacement of service has occurred, the communities are offered greater schedule frequency than the air carriers could afford, given their large aircraft and the low passenger density of the markets. In many markets, demand has substantially increased as a result of the greater schedule frequency.

There is a growing trend toward utilization of new larger turbo-prop aircraft by commuter carriers. As such, several aircraft manufacturers have development plans to design new aircraft for the thin, short-haul markets serviced by the commuters, one more indication of the marketplace presence enjoyed by these carriers. In the past, commuters were largely restricted to the use of general aviation aircraft. Today, manufacturers in the United States and, more significantly, in other countries are delivering aircraft designed to efficiently serve commuter markets. These larger aircraft are proving attractive to travelers accustomed to the amenities of the air carrier jets.

With the move to larger aircraft and greatly expanded route structures, many of the commuter carriers resemble the local service carriers of an earlier day. Improved passenger service, joint fares and reservation tie-ins with the major carriers all contribute to their ability to service the public.

#### Assumptions for Commuter Forecast

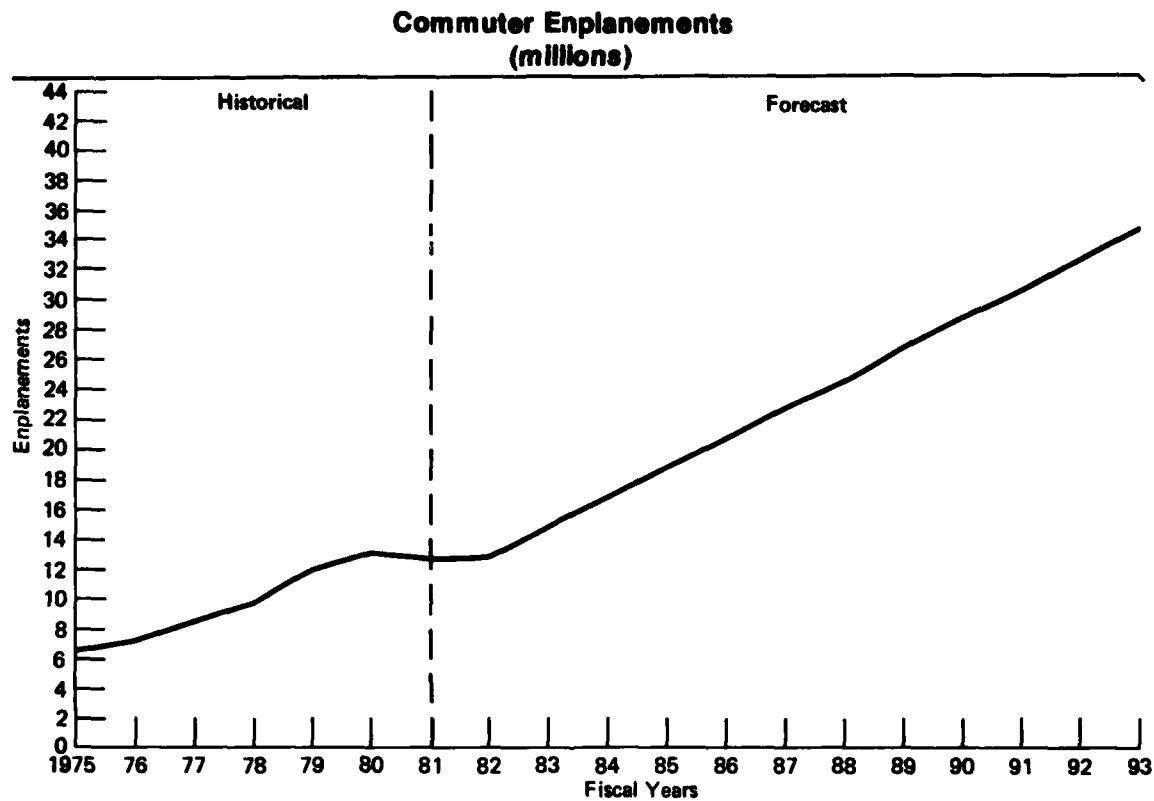
Although initially impacted by the instability of air carrier flight schedules at major hub airports in August and September 1981, it is expected that commuter carriers will benefit in the intermediate- and long-term by starting service in many of the short-haul markets abandoned by the larger air carriers. It is also expected that the average number of seats per aircraft, the number of city-pairs served and the average stage length will increase over the forecast period. However, it is assumed that the commuters will continue to service primarily those markets under 200 miles where they are now concentrated. Growth achieved through replacement of air carrier service will cease to be a major factor by 1985. After that time, growth for the industry is expected to come from increasing demand placed on a stable, mature commuter airline industry.

#### Forecast

After a brief downturn in the demand for commuter service in 1981 and 1982, the forecast shows that the strong growth in commuter activity relative to other segments of the aviation industry is expected to resume in 1983. The forecast anticipates higher growth rate in the early years of the forecast period and a gradual decline in the magnitude of that growth as 1993 is approached.

By 1983, the commuters are forecast to enplane 14.9 million passengers, a 15.5 percent increase over the depressed 1981 levels. Revenue passenger miles are forecast to be 18.5 percent above 1981 levels, or 2.0 billion passenger miles. Passenger enplanements are anticipated to grow 13.4 percent in 1984 and 11.2 percent in 1985, while revenue passenger miles are expected to grow 15.3 percent in 1984 and 13.2 percent in 1985.

However, these rates of growth are not expected to be maintained over the entire forecast period as the commuter market matures. Thus, the expected average growth rate between 1981 and 1993 is 8.6 percent for enplanements and 9.7 percent for passenger miles. This forecast implies that enplanements will more than double their 1981 level during the forecast period to 34.8 million enplanements in 1993. Revenue passenger miles will more than triple their 1981 level to 5.6 billion in 1993.



Source: Civil Aeronautics Board

#### FAA WORKLOAD FORECASTS

##### AIR TRAFFIC CONTROL: Accommodating Growth

The FAA provides the aviation community with three operational services: air traffic control at selected airports, traffic surveillance and aircraft separation by Air Route Traffic Control Centers, and flight planning and pilot briefs at the Flight Service Stations. All four categories of aviation--general aviation, air carrier, commuter and military--employ these services to enhance aviation traffic safety.

Multiple indicators are used to describe the total FAA operational workload. The four categories of system users differ in the demands they impose on the air traffic system. Consequently, no single measure typifies past trends and future demand for these FAA services. There have been, and will continue to be, different socioeconomic forces driving the growth of each of the system users.

### Tower Activity

Aviation activity at FAA towered airports, which declined by 4.1 percent in 1980, incurred a further decline of 6.9 percent in 1981. Demand by air carriers and general aviation declined while military operations remained about constant. General aviation led the decline as operations fell 11.6 percent below 1980 levels. Only commuter operations, the fastest growing category over the past several years, showed an increase in 1981, up 6.5 percent over 1980 levels.

Notwithstanding capacity reductions, total operations at FAA towered airports were expected to decline in 1981. General aviation and air carriers showed declines of 8.0 and 3.8 percent, respectively. Itinerant operations by general aviation declined only 4.1 percent in 1981, reflecting the increasing utility of general aviation to business. Military use of FAA facilities, which had held constant over the past several years, held constant at 2.5 million operations in 1981.

Instrument operations handled at FAA towers have shown uninterrupted growth over the past decade. However, due to the recession and constraints placed on the system, instrument operations declined 2.6 percent in 1981, led by a 3.8 percent reduction in air carrier operations. Commuter operations showed an increase of 12.2 percent in 1981, while military operations declined 4.9 percent.

### Center Traffic

In the four years between 1976 and 1980, the number of aircraft flying under instrument rules handled by Air Route Traffic Control Centers' personnel increased dramatically from 23.9 to 30.1 million, or 6.2 million additional aircraft handled in 1980. The growth for the period 1970 to 1976 was just 2.3 million. As is the case with the instrument operations at FAA towers, this recent rapid increase is attributed to the growth of the commuter industry as well as increasing capability of general aviation pilots and aircraft. However, despite an increase of 11.5 percent for commuters in 1981, the total number of aircraft handled by the Centers declined by 2.7 percent. This resulted largely from a decline of 7.2 percent in the number of air carrier aircraft handled. The number of general aviation and military aircraft handled remained constant at 1980 levels during 1981.

### Flight Service Station Activity

User demands on the Flight Service Stations began a decline in 1980 which continued into 1981. In 1981, the total number of pilot briefings, flight plans originated and aircraft contacted decreased 2.6 percent from 1980 levels to 62.6 million.

### Assumptions for FAA Workload Forecasts

Growth in FAA workload measures is a function of demand imposed on the National Airspace System plus inclusion of aviation activity at locations previously not provided FAA services. Thus, the number of aircraft operations at FAA towered airports in 1993 will consist of traffic at current towers plus those airports with newly commissioned towers during the forecast period. The forecast does reflect temporary tower closures. Air carrier operations for 1982 were developed based on analysis of published schedules.

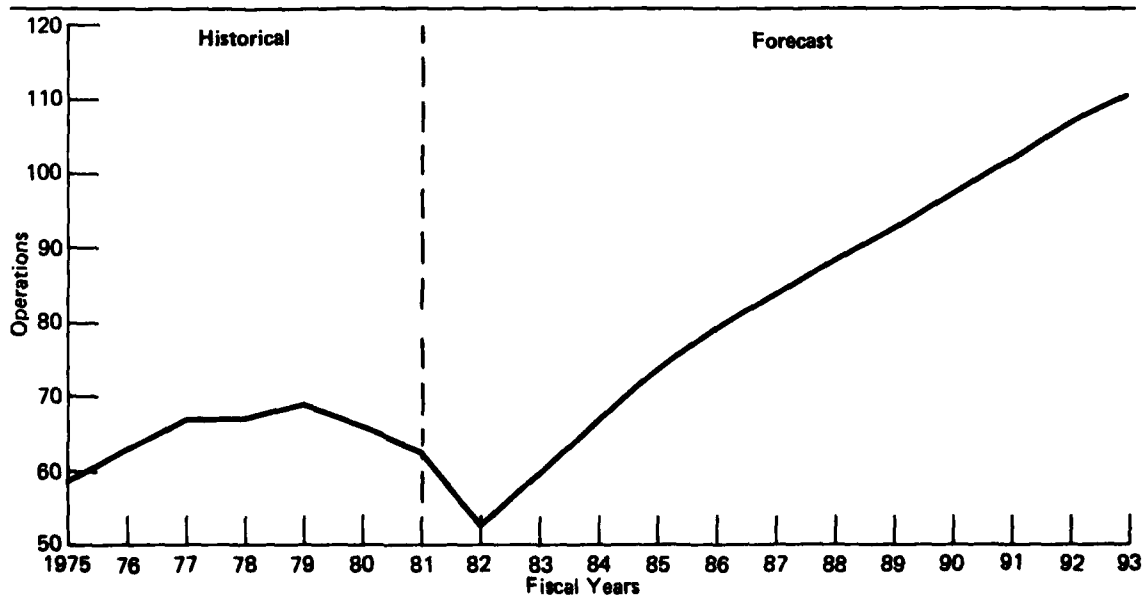
Because of increasing air traffic density at airports with FAA traffic control service, the number of Terminal Control Areas and Terminal Radar Service Areas are expected to increase during the 1981-1993 forecast period. The establishment of a Terminal Control Area at an airport has the effect of reducing existing visual flight rule traffic and increasing instrument operations.

No specific assumptions beyond the changing traffic mix discussed as part of the aviation activity forecasts have been made in developing the Air Route Traffic Control Center forecast.

### Forecast

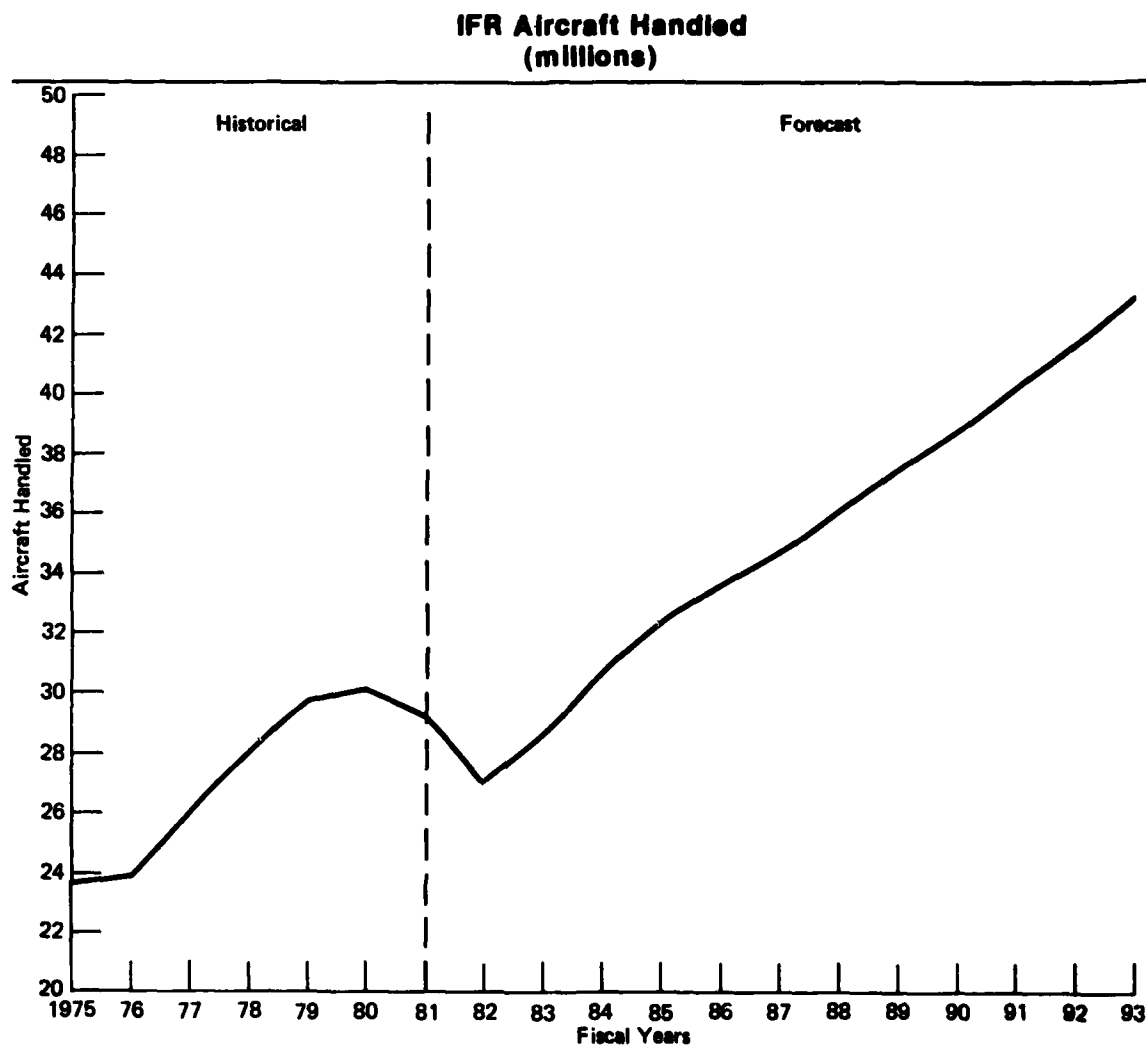
Despite an expected decline of 14.6 percent in 1982, aircraft operations at FAA towered airports are forecast to increase at a 5.0 percent annual rate between 1981 and 1993, from 61.6 million to 110.4 million. The mix of traffic is likely to become increasingly more heterogeneous since the general aviation and commuter fleets of smaller aircraft are growing at a faster rate than the air carrier fleet of larger jets. Instrument operations at and near airports with FAA towers are forecast to increase at an annual growth rate of 3.4 percent between 1981 and 1993, despite a 8.6 percent decline in 1982.

**Total Operations at Airports with FAA Traffic Control Service  
(millions)**



Source: FAA Air Traffic Activity

The workload at Air Route Traffic Control Centers during the same period is estimated to grow at an annual rate of 3.3 percent. Approximately 44 percent of the traffic now handled at the Centers are air carrier flights. By 1993, only 37.1 percent of the Centers' workload is expected to be generated by the air carriers, both general aviation and air taxi increasing their shares of the total workload.



Total services rendered at Flight Service Stations are forecast to increase 70.0 percent between 1981 and 1993, an average annual growth rate of 4.5 percent.

## CHAPTER 3      ALTERNATIVE SCENARIOS



**Aviation  
Forecasts**  
Fiscal Years 1982-1993

### CHAPTER III

#### ALTERNATIVE SCENARIOS

The view into the future is always uncertain. Events, now unknown, will occur and upset the best calculations. Forecasting techniques employing historical relationships and accounting for expected events provide a rational and controlled basis for prediction of future trends. The baseline forecasts presented in the previous chapter represent the outcome implicit in the President's Economic Recovery Program.

Three alternative forecasts of aviation activity and FAA workload have been prepared based on different sets of economic and event scenarios. The intent of these scenarios is not to forecast what is expected to happen, but rather to reflect what could happen to aviation if the driving economic and societal events should change. The economic and societal assumptions underlying these forecasts are defined. Certain events--such as vacation and travel attitudes, video conferencing, fuel availability, vertical takeoff and landing service, airport groundside congestion, general aviation taxes, and instrument pilot population growth--were assessed in developing the alternative scenarios. The formal processes of trend impact analysis and cross impact analysis were employed, resulting in either increases or decreases in the forecasts generated with the alternative economic parameters.

Forecast users are encouraged to incorporate these alternative forecasts as an element in their long range planning activities. The forecasts are national in scope. The trends and events discussed here are intended as examples of what might happen, not necessarily what is expected to happen, if: (1) rapid economic expansion were to occur and, (2) if recovery from the current recession is significantly delayed.\* Thus, formal or informal scenarios may be developed in support of specific capital projects using these alternatives scenarios as a starting point.

A third scenario is presented here, utilizing the December 1981 economic assumptions of the Wharton Econometric Model. While differences do exist between the Presidents' Econometric Recovery Program and the Wharton scenario, the differences are a matter of degree and well within the expected error range. In general, the economic recovery scenario contains a more optimistic view relative to Wharton's concerning growth and prices.

The tables on the following pages provide a summary of the three scenarios in comparison to the baseline forecasts for the year 1993. The scenarios cover the entire 12 year period. Thus, the reported values for the economic, aviation activity and FAA workload measures represent the end states if the scenarios were to transpire.

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\*A detailed description of these two scenarios is contained in the Federal Aviation Administration publication FAA-AVP-80-8, FAA Aviation Forecast Fiscal Years 1981-1992, September 1980.



**COMPARISON OF ALTERNATIVE SCENARIO FORECASTS  
ECONOMIC VARIABLES  
FY 1993**

<b>Economic Variable</b>	<b>Economic Expansion</b>	<b>President's Economic Recovery</b>	<b>Wharton Econometric Model</b>	<b>Stagflation</b>
GNP (billions of 72\$)	2,358.7	2,251.0	2,094.2	1,898.9
CPI (1967 = 100)	667.0	464.1	712.6	605.0
DPI (billions of 72\$)	1,676.7	1,530.1	1,404.9	1,288.1
Oil & Gas Deflator (1972 = 100)	1,290.9	637.9	1,259.5	975.5

**COMPARISON OF ALTERNATIVE SCENARIO FORECASTS  
AVIATION ACTIVITY  
FY 1993**

<b>Aviation Activity Measure</b>	<b>Economic Expansion</b>	<b>President's Economic Recovery</b>	<b>Wharton Econometric Model</b>	<b>Stagflation</b>
<b>Scheduled Domestic Passenger Traffic</b>				
Revenue Passenger Miles (billions)	447.4	365.8	351.1	337.5
Revenue Passenger Enplanements (millions)	607.9	455.5	433.5	458.6
<b>Fleet Size</b>				
Air Carrier	4,154	3,088	3,088	2,331
General Aviation (thousands)	361.3	332.9	324.3	274.4
<b>Hours Flown (millions)</b>				
Air Carrier	11.3	8.4	8.3	6.3
General Aviation	77.0	71.5	66.2	56.0

**COMPARISON OF ALTERNATIVE SCENARIO FORECASTS  
FAA WORKLOAD  
FY 1993**

Aviation Activity Measure	Economic Expansion	President's Economic Recovery	Wharton Econometric Model	Stagflation
<b>Tower Operations (millions)</b>				
Total	121.3	110.4	97.0	59.0
Itinerant	84.5	72.0	66.9	46.5
Air Carrier	16.7	11.7	10.8	9.2
Air Taxi and Commuter	12.3	8.8	8.8	7.0
General Aviation	54.2	50.3	46.1	30.3
Military	1.3	1.2	1.2	1.2
Local	36.8	38.4	30.1	12.5
General Aviation	35.5	37.1	28.8	11.2
Military	1.3	1.3	1.3	1.3
<b>Instrument Operations (millions)</b>				
Total	82.6	55.4	53.3	45.1
Air Carrier	17.0	12.3	11.3	9.5
Air Taxi and Commuter	12.1	8.8	8.8	6.6
General Aviation	49.2	30.4	29.3	24.7
Military	4.3	3.9	3.9	4.3
<b>IFR Aircraft Handled (millions)</b>				
Total Handled	61.3	43.4	40.7	34.1
Air Carrier Handled	24.5	16.1	14.6	12.8
Air Taxi Handled	8.0	5.6	5.6	4.3
General Aviation Handled	24.0	17.1	15.9	12.3
Military Handled	4.8	4.6	4.6	4.7
<b>Flight Services (millions)</b>				
Total	128.6	106.4	98.6	77.1
Pilot Briefs	39.9	32.6	29.8	22.5
Flight Plans Originated	18.6	15.6	14.5	12.3
Aircraft Contacted	11.6	10.0	10.0	7.5

CHAPTER 4    YEAR-BY-YEAR DATA FOR FAA AVIATION FORECASTS,  
FISCAL YEARS 1982-1993



**Aviation  
Forecasts**  
Fiscal Years 1982-1993

CHAPTER IV  
YEAR-BY-YEAR DATA FOR FAA AVIATION FORECASTS,  
FISCAL YEARS 1982-1993

Chapter IV provides the detailed data for the national aviation and FAA workload series forecasted by the FAA Office of Aviation Policy and Plans. The addition of newly certificated carriers reporting to the CAB since deregulation and the reporting of San Juan and Virgin Island traffic as domestic beginning January 1, 1981, should be noted.

TABLE 1

**UNITED STATES CERTIFICATED ROUTE AIR CARRIER  
SCHEDULED PASSENGER TRAFFIC**

Fiscal Year	Revenue Passenger Enplanements (millions)			Revenue Passenger Miles (billions)		
	Total	Domestic	International	Total	Domestic	International
<b>Historical*</b>						
1975	201.9	184.9	17.0	159.0	127.7	31.3
1976	211.8	195.1	16.7	169.5	137.3	32.2
1977	234.2	216.6	17.6	187.7	152.3	35.4
1978	266.7	246.7	20.0	218.9	176.8	42.1
1979(1)	310.7	287.1	23.6	256.6	204.8	51.8
1980(1)	302.6	278.3	24.3	258.5	203.7	54.8
1981(2)	285.7	264.5	21.2	248.2	197.6	50.6
<b>Forecast</b>						
1982	277.8	255.9	21.9	248.8	196.8	52.0
1983	292.4	269.0	23.4	263.6	207.9	55.7
1984	311.7	287.1	24.6	281.3	222.8	58.5
1985	332.8	307.2	25.6	300.2	239.3	60.9
1986	354.5	327.5	27.0	320.3	256.1	64.2
1987	374.9	346.6	28.3	339.5	272.1	67.4
1988	392.9	363.3	29.6	356.7	286.3	70.4
1989	411.6	380.8	30.8	374.5	301.2	73.3
1990	431.0	399.0	32.0	393.0	316.8	76.2
1991	451.0	417.4	33.6	412.7	332.7	80.0
1992	471.5	436.4	35.1	432.7	349.1	83.6
1993	492.2	455.5	36.7	453.2	365.8	87.4

\*Source: CAB Air Carrier Traffic Statistics.

Prior to 1977, the fiscal year ended on June 30.

Detail may not add to total because of independent rounding.

(1) Introduces scheduled passenger traffic of the following carriers not previously reporting to the CAB. Date of first reported traffic data is shown following each carrier's name.

AeroMech	7-79	Cascade	4-80	Midway	11-79
Air California	1-79	Cochise	1-79	Mississippi Valley	4-79
Air Florida	1-79	Coleman	9-79	New Haven/Newair	5-79
Air North	6-80	Empire	10-79	New York Air	12-80
Air Wisconsin	7-79	Golden Gate	5-80	Pacific Southwest	1-79
Altair	1-79	Golden West	2-79	Sea Airmotive	1-80
Apollo	5-79	Great American	10-80	Sky West	7-79
Big Sky	6-79	Great Northern	1-80	Southeast	7-79
Britt	1-81	Imperial	1-80	Southwest	7-79
Capitol	7-80	Mid-South	6-80	Swift	1-79
				World	7-80

(2) San Juan and Virgin Islands Traffic reported as domestic beginning January 1, 1981.

TABLE 2

U.S AIR CARGO TRAFFIC(1)  
ALL SERVICES AT U.S. AIRPORTS(2)

Calendar Year	Revenue Cargo Enplaned Tons (thousands)			Revenue Cargo Ton-Miles (Millions)		
	Total	International		Total	International	
		U.S. Domestic (3)	U.S. Flag		U.S. Domestic (3)	U.S. Flag
<b>Historical*</b>						
1975	4,977	3,182	897	9,891	3,468	2,730
1976	5,271	3,379	916	10,607	3,664	2,861
1977	5,647	3,587	940	11,546	3,947	3,028
1978	6,050	3,844	941	12,664	4,371	3,031
1979	6,022	3,738	961	13,026	4,418	3,153
1980	6,222	3,751	1,059	13,392	4,269	3,258
1981E	6,196	3,726	981	13,528	4,322	3,027
<b>Forecast</b>						
1982	6,350	3,768	1,015	14,105	4,408	3,148
1983	6,613	3,885	1,068	14,879	4,584	3,321
1984	6,956	4,071	1,126	15,784	4,845	3,512
1985	7,306	4,256	1,190	16,733	5,086	3,723
1986	7,698	4,471	1,256	17,706	5,365	3,942
1987	8,090	4,679	1,320	18,724	5,638	4,158
1988	8,523	4,915	1,390	19,814	5,947	4,394
1989	8,949	5,145	1,452	20,931	6,251	4,620
1990	9,398	5,373	1,532	22,098	6,555	4,870
1991	9,855	5,629	1,605	23,242	6,895	5,118
1992	10,332	5,898	1,683	24,428	7,254	5,384
1993	10,835	6,178	1,763	25,703	7,630	5,658
E - Estimate						

\*Source: U.S. Carriers FAA/CAB Airport Activity Statistics, CAB Air Carrier Traffic Statistics, Foreign Flag, U.S. Department of Commerce U.S. Domestic and Foreign Exports by Air and U.S. General Imports by Air.

(1) Includes Freight, Express and Mail

(2) Includes scheduled and nonscheduled service of all U.S. and Foreign Flag Carriers

(3) San Juan and Virgin Islands Traffic Reported as Domestic Beginning January 1, 1981.

TABLE 3

TOTAL LARGE JET AIRCRAFT IN  
U.S. COMMERCIAL AIRLINE SERVICE  
BY AIRCRAFT TYPE

As of January 1	Total	Narrow Body			Wide Body		
		2 Engine	3 Engine	4 Engine	2 Engine	3 Engine	4 Engine
Historical*							
1975	2,117	541	747	526	-	199	104
1976	2,114	518	792	504	-	202	98
1977	2,139	535	820	477	-	202	105
1978	2,168	553	865	436	2	204	108
1979	2,237	576	931	394	6	215	115
1980	2,394	615	1,029	380	12	227	131
1981	2,475	663	1,097	297	19	255	144
Forecast							
1982	2,541	728	1,109	252	26	273	153
1983	2,665	774	1,146	250	60	280	155
1984	2,697	788	1,123	229	116	283	158
1985	2,713	826	1,077	201	160	283	166
1986	2,721	866	1,037	159	198	288	173
1987	2,710	881	983	138	228	291	189
1988	2,735	916	931	114	273	293	208
1989	2,774	982	884	92	309	295	212
1990	2,835	1,051	828	81	360	292	223
1991	2,945	1,146	776	81	416	285	241
1992	3,064	1,240	722	80	478	291	253
1993	3,088	1,330	636	76	519	273	254

\*Source: FAA Aircraft Utilization and Propulsion Reliability Report

TABLE 4

TOTAL AIRBORNE HOURS  
U.S. COMMERCIAL AIRLINE LARGE JET AIRCRAFT  
BY AIRCRAFT TYPE  
(MILLIONS)

Fiscal Year	Total	Narrow Body				Wide Body			
		2 Engine	3 Engine	4 Engine		2 Engine	3 Engine	4 Engine	
Historical*									
1975	5.62	1.40	2.06	1.34		-	.50	.32	
1976	5.54	1.26	2.07	1.33		-	.53	.35	
1977	5.53	1.21	2.14	1.20		-	.59	.39	
1978	5.91	1.40	2.35	1.12		.01	.62	.41	
1979	6.39	1.56	2.71	.99		.02	.64	.47	
1980	6.72	1.59	3.02	.79		.04	.75	.53	
1981E	6.72	1.64	3.00	.74		.05	.76	.53	
Forecast									
1982	6.68	1.76	2.88	.57		.07	.84	.56	
1983	6.92	1.82	2.98	.55		.15	.85	.57	
1984	7.16	1.93	2.97	.51		.30	.87	.58	
1985	7.31	2.05	2.92	.45		.41	.88	.60	
1986	7.44	2.17	2.87	.36		.52	.89	.63	
1987	7.54	2.25	2.75	.32		.61	.91	.70	
1988	7.63	2.36	2.61	.27		.72	.91	.76	
1989	7.79	2.55	2.48	.22		.82	.92	.80	
1990	7.95	2.75	2.32	.18		.95	.91	.84	
1991	8.15	2.97	2.15	.18		1.09	.87	.88	
1992	8.36	3.18	1.99	.18		1.22	.87	.92	
1993	8.41	3.40	1.75	.17		1.33	.83	.93	

\*Source: Estimate based on FAA Aircraft Utilization and Propulsion Reliability Report.



TABLE 5

COMPUTER AIRLINES TRAFFIC AND OPERATIONS (1)  
(Millions)

Fiscal Year	Revenue Passenger Enplanements			Revenue Passenger Miles			Aircraft Operations (2)		
	48	Hawaii/	Puerto Rico/	48	Hawaii/	Puerto Rico/	48	Hawaii/	Puerto Rico/
Historical	Total States(3)	Virgin I.(4)	Virgin I.(4)	Total States(3)	Virgin I.(4)	Virgin I.(4)	Total States(3)	Virgin I.(4)	Virgin I.(4)
1975	6.4	5.1	1.3	685.8	593.4	92.4	2.6	2.3	.3
1976	7.1	5.7	1.4	756.1	659.1	97.0	2.8	2.4	.4
1977	8.2	6.7	1.5	888.6	786.5	102.1	3.2	2.8	.4
1978	9.8	8.3	1.5	1,108.7	1,003.6	103.1	3.6	3.2	.4
1979	12.0	10.2	1.8	1,444.8	1,316.4	128.4	4.2	3.7	.5
1980	13.1	11.5	1.6	1,724.2	1,612.3	111.9	4.5	4.1	.4
1981E	12.9	11.2	1.7	1,689.4	1,564.7	124.7	4.4	3.9	.5
Forecast									
1982	13.0	10.7	2.3	1,716.5	1,540.8	175.7	4.3	3.8	.5
1983	14.9	12.2	2.7	2,002.4	1,793.4	209.0	4.7	4.1	.6
1984	16.9	13.8	3.1	2,308.3	2,070.0	238.3	5.0	4.4	.6
1985	18.8	15.3	3.5	2,612.1	2,340.9	271.2	5.4	4.7	.7
1986	20.7	16.8	3.9	2,928.0	2,620.8	307.2	5.7	5.0	.7
1987	22.7	18.4	4.3	3,269.8	2,923.6	346.2	6.1	5.3	.8
1988	24.6	19.9	4.7	3,603.1	3,223.8	379.3	6.4	5.6	.8
1989	26.7	21.7	5.0	3,983.6	3,580.5	403.1	6.8	5.9	.9
1990	28.8	23.5	5.3	4,371.8	3,948.0	423.8	7.1	6.2	.9
1991	30.6	25.3	5.3	4,756.4	4,326.3	430.1	7.5	6.5	1.0
1992	32.6	27.2	5.4	5,169.3	4,732.8	436.5	7.8	6.8	1.0
1993	34.8	29.3	5.5	5,628.9	5,185.8	443.1	8.1	7.0	1.1

## E - Estimate Sources Civil Aeronautics Board

(1) Includes the following computer carriers holding Section 401 certificates and not reporting on CAB Form 298-C (Traffic duplicated in Table 1). Date of last 298-C Report is shown following each carrier name

Aeromach	9-80	Cochise	12-78	Mississippi Valley	6-79
Air North	9-80	Empire	9-80	Newair	9-80
Air Wisconsin	9-78	Golden Gate	9-80	Sea Air motive	9-80
Altair	12-78	Golden West	12-78	Shy West	12-78
Apollo	12-79	Imperial	6-79	Southeast	6-79
Big Sky	6-79	Mokey Int'l.	3-79	Swift Aire	9-80
Cascade	9-80	Mid-South	9-80		

(2) Based on Official Airline Guide Published Schedules, including Passenger and All-Cargo Operations.

(3) Forecasts exclude Alaska Computer Operations.

(4) Newair Forecast includes operations of Mid Pacific Airlines, which started service in March 1981.

TABLE 6

**ESTIMATED ACTIVE GENERAL AVIATION  
AIRCRAFT BY TYPE OF AIRCRAFT  
(thousands)**

As of January 1	Total	Fixed Wing				Rotorcraft			Balloons Dirigibles Glanders
		Piston		Turboprop	Turbojet	Piston	Turbine		
		Single Engine	Multi- Engine						
		Historical*							
1975	161.0	131.5	19.7	2.1	1.6	2.3	1.3	2.5	
1976	168.0	136.6	20.3	2.5	1.7	2.5	1.6	2.8	
1977	178.0	144.8	21.3	2.5	1.9	2.7	1.7	3.1	
1978	184.3	149.3	21.5	2.9	2.3	2.7	2.1	3.6	
1979	198.8	160.7	23.2	3.1	2.5	2.8	2.5	4.0	
1980	210.3	168.4	25.1	3.5	2.7	3.1	2.7	4.8	
1981	211.0	168.4	24.6	4.1	3.0	2.8	3.2	4.9	
Forecast									
1982	214.0	169.5	25.4	4.5	3.1	3.1	3.4	5.0	
1983	218.1	171.9	26.0	4.9	3.2	3.2	3.6	5.2	
1984	223.9	175.9	26.8	5.3	3.3	3.3	3.8	5.5	
1985	231.9	181.7	27.8	5.8	3.4	3.4	4.0	5.8	
1986	242.4	189.2	29.0	6.3	3.7	3.6	4.4	6.2	
1987	253.9	198.0	30.2	6.8	3.9	3.8	4.7	6.5	
1988	265.8	206.5	31.6	7.4	4.2	3.9	5.0	7.2	
1989	278.4	215.9	33.0	7.9	4.5	4.1	5.3	7.7	
1990	291.9	225.9	34.5	8.4	4.8	4.3	5.8	8.2	
1991	305.9	236.2	36.1	8.9	5.1	4.6	6.1	8.9	
1992	319.5	246.5	37.5	9.4	5.4	4.8	6.5	9.4	
1993	332.9	256.6	38.8	9.9	5.8	5.0	6.9	9.9	

\*Source: FAA Statistical Handbook of Aviation

Detail may not add to total because of independent rounding.

An active aircraft must have a current registration and it must have been flown at least 1 hour during the previous calendar year.

**TABLE 7**  
**ESTIMATED ACTIVE GENERAL AVIATION**  
**AIRCRAFT BY FAA REGION**  
(thousands)

As of January 1 Historical*	Total	FAA Region								
		ANE	AEA	ASO	AGL	ACE	ASW	AWP	ANM	AAL
1975	161.0	6.2	21.1	24.3	32.9	11.6	21.6	25.3	14.6	3.4
1976	168.0	6.4	21.1	24.8	33.2	12.3	23.0	26.2	16.8	4.2
1977	178.0	6.4	21.7	26.2	35.3	13.3	24.2	27.9	18.3	4.7
1978	184.3	6.6	21.7	26.9	36.0	13.6	25.8	29.1	19.7	4.9
1979	198.8	7.5	23.7	29.5	37.5	13.8	26.7	31.3	23.0	5.8
1980	210.3	7.4	22.9	29.7	39.7	14.1	30.9	35.3	24.4	5.9
1981	211.0	7.4	23.0	29.8	39.9	14.1	31.0	35.4	24.5	5.9
Forecast										
1982	214.0	7.5	23.3	30.3	40.5	14.3	31.4	35.9	24.8	6.0
1983	218.1	7.6	23.8	30.8	41.2	14.6	32.1	36.6	25.3	6.1
1984	223.9	7.8	24.4	31.6	42.3	15.0	32.9	37.6	26.0	6.3
1985	231.9	8.1	25.3	32.7	43.8	15.5	34.1	39.0	26.9	6.5
1986	242.4	8.5	26.4	34.3	45.8	16.2	35.6	40.7	28.1	6.8
1987	253.9	8.9	27.7	35.8	48.0	17.0	37.3	42.7	29.4	7.1
1988	265.8	9.3	29.0	37.5	50.2	17.8	39.1	44.7	30.8	7.4
1989	278.4	9.7	30.3	39.3	52.6	18.7	40.9	46.8	32.3	7.8
1990	291.9	10.2	31.8	41.1	55.2	19.6	42.9	49.0	33.9	8.2
1991	305.9	10.7	33.3	43.1	57.8	20.5	45.0	51.4	35.5	8.6
1992	319.5	11.2	34.8	45.0	60.4	21.4	47.0	53.7	37.1	8.9
1993	332.9	11.7	36.3	46.9	62.9	22.3	49.0	55.9	38.6	9.3

\*Source: FAA Statistical Handbook of Aviation  
Detail may not add to total because of independent rounding.

TABLE 8

ESTIMATED HOURS FLOWN IN  
GENERAL AVIATION BY TYPE OF AIRCRAFT  
(millions)

Fiscal Year	Total	Fixed Wing				Rotorcraft			
		Piston		Turbojet	Turboprop	Piston	Turbine	Balloons	
		Single Engine	Multi-Engine					Dirigibles	Gliders
<b>Historical*</b>									
1975	31.9	22.8	5.3	1.3	.8	.7	.8	.2	.3
1976	33.4	23.9	5.4	1.3	.9	.7	.9	.3	.3
1977	35.3	24.8	5.9	1.5	1.1	.6	1.2	.3	.3
1978	38.5	27.0	6.2	1.6	1.2	.8	1.4	.3	.3
1979	42.3	29.7	6.8	1.8	1.2	.9	1.6	.3	.4
1980	41.6	28.8	6.6	2.1	1.3	.8	1.6	.4	.4
1981	42.7	29.3	6.7	2.3	1.4	.8	1.8	.4	.4
<b>Forecast</b>									
1982	43.9	29.7	7.0	2.5	1.5	.8	2.0	.4	.4
1983	45.0	30.2	7.2	2.7	1.5	.9	2.1	.4	.4
1984	46.5	31.2	7.4	2.8	1.6	.9	2.2	.4	.4
1985	49.0	32.6	7.7	3.1	1.7	.9	2.5	.5	.5
1986	51.4	34.2	8.1	3.3	1.7	.9	2.7	.5	.5
1987	53.7	35.7	8.4	3.6	1.8	.9	2.8	.5	.5
1988	56.5	37.4	8.8	3.9	1.9	1.0	3.0	.5	.6
1989	59.4	39.2	9.2	4.1	2.1	1.0	3.2	.6	.6
1990	62.5	41.2	9.7	4.3	2.2	1.1	3.4	.7	.7
1991	65.5	43.1	10.1	4.6	2.3	1.1	3.6	.7	.7
1992	68.4	44.9	10.4	4.8	2.5	1.2	3.9	.7	.7
1993	71.5	46.7	10.8	5.1	2.7	1.3	4.2	.7	.7

\*Source: FAA Statistical Handbook of Aviation  
Prior to 1977, the fiscal year ended on June 30.  
Detail may not add to total because of independent rounding.

**TABLE 9**  
**ESTIMATED FUEL CONSUMED BY**  
**GENERAL AVIATION BY TYPE OF AIRCRAFT**  
(millions of gallons)

Fiscal Year	Total	Fixed Wing				Rotorcraft		
		Piston		Turbojet	Piston	Turbine	Other	
		Single Engine	Multi-Engine					
Historical*								
1975	945.4	216.0	185.8	153.0	351.5	9.6	28.9	.6
1976	1,013.2	230.0	191.5	153.0	395.5	9.8	32.5	.9
1977	1,159.2	236.0	209.8	176.6	483.3	9.2	43.3	1.0
1978	1,232.4	251.0	211.4	188.3	517.8	12.3	50.6	1.0
1979	1,322.8	282.2	238.0	207.0	522.0	14.2	58.4	1.0
1980	1,383.8	273.6	231.0	241.5	565.5	12.6	58.4	1.2
1981	1,465.9	278.4	234.5	264.5	609.0	12.6	65.7	1.2
Forecast								
1982	1,554.0	282.2	245.0	287.5	652.5	12.6	73.0	1.2
1983	1,594.0	286.9	252.0	310.5	652.5	14.2	76.7	1.2
1984	1,669.1	296.4	259.0	322.0	696.0	14.2	80.3	1.2
1985	1,782.2	309.7	269.5	356.5	739.5	14.2	91.3	1.5
1986	1,841.7	324.9	283.5	379.5	739.5	14.2	98.6	1.5
1987	1,948.1	339.2	294.0	414.0	783.0	14.2	102.2	1.5
1988	2,065.1	355.3	308.0	448.5	826.5	15.8	109.5	1.5
1989	2,213.8	372.4	322.0	471.5	913.5	15.8	116.8	1.8
1990	2,325.7	391.4	339.5	494.5	957.0	17.4	124.1	1.8
1991	2,443.4	409.5	353.5	529.0	1,000.5	17.4	131.4	2.1
1992	2,593.6	426.6	364.0	552.0	1,087.5	19.0	142.4	2.1
1993	2,758.6	443.7	378.0	586.5	1,174.5	20.5	153.3	2.1

\*Source: FAA APO Estimates  
Prior to 1977, the fiscal year ended on June 30.

TABLE 10

ESTIMATED FUEL CONSUMED BY  
UNITED STATES DOMESTIC CIVIL AVIATION  
(millions of gallons)

Fiscal Year	Total Jet Fuel and Aviation Gasoline	Jet Fuel			Aviation Gasoline		
		Total	Air Carrier	General Aviation	Total	Air Carrier	General Aviation
<b>Historical*</b>							
1975	8,825	8,393	7,860	533	432	20	412
1976	8,855	8,403	7,822	581	452	20	432
1977	9,563	9,088	8,385	703	475	19	456
1978	9,919	9,426	8,669	757	493	17	476
1979	10,612	10,062	9,275	787	550	15	535
1980	10,690	10,161	9,296	865	529	13	516
1981E	10,461	9,923	8,984	939	538	11	527
<b>Forecast</b>							
1982	10,100	9,550	8,537	1,013	550	9	541
1983	10,241	9,680	8,640	1,040	561	7	554
1984	10,732	10,155	9,057	1,098	577	6	571
1985	11,234	10,634	9,447	1,187	600	5	595
1986	11,641	11,012	9,794	1,218	629	5	624
1987	11,996	11,343	10,044	1,299	653	4	649
1988	12,342	11,658	10,273	1,385	684	3	681
1989	12,765	12,051	10,549	1,502	714	2	712
1990	13,163	12,411	10,835	1,576	752	2	750
1991	13,608	12,823	11,162	1,661	785	2	783
1992	14,090	13,276	11,494	1,782	814	2	812
1993	14,586	13,740	11,826	1,914	846	2	844

\*Source: FAA APO Estimates

Prior to 1977, the fiscal year ended on June 30.

Domestic civil aviation is defined for purposes of the table to include all civil aircraft flights which originate and terminate within the 50 states. Estimates of fuel consumed by airframe and aircraft engine manufacturers, whether for flight testing, or ground testing are not shown here because they are not available for the domestic industry as a whole and estimates cannot be developed with any assurance of accuracy. Estimates of fuel consumed by the supplemental, contract and intrastate carriers are included in the "Air Carrier" columns. It should also be noted that general aviation fuel consumption is not reported and historical series are estimates.

TABLE 11

TOTAL ITINERANT AND LOCAL AIRCRAFT OPERATIONS  
AT AIRPORTS WITH FAA TRAFFIC CONTROL SERVICE  
(millions)

Fiscal Year	Total	Itinerant	Local	Number of Towers
<b>Historical*</b>				
1975	58.9	37.6	21.4	416
1976	62.5	39.7	22.8	423
1977	66.7	42.4	24.3	426
1978	67.2	43.6	23.6	428
1979	69.0	45.4	23.6	431
1980	66.2	44.3	21.9	432
1981	61.6	42.0	19.5	433
<b>Forecast</b>				
1982	52.6	37.3	15.3	367
1983	59.8	41.3	18.5	389
1984	66.8	45.1	21.7	411
1985	73.6	48.7	24.9	433
1986	79.0	51.8	27.2	435
1987	83.5	54.4	29.1	437
1988	88.1	57.3	30.8	439
1989	92.5	60.2	32.3	441
1990	97.2	63.4	33.8	443
1991	101.7	66.3	35.4	445
1992	106.2	69.3	36.9	447
1993	110.4	72.0	38.4	449

\*Source: FAA Air Traffic Activity.

1982-1984 operations reflect the temporary closures of FAA Air Traffic Control Towers. Detail may not add to total because of independent rounding.

Prior to 1977, the fiscal year ended June 30.

An aircraft operation is defined as an aircraft arrival at or a departure from an airport with FAA traffic control service. A local operation is performed by an aircraft that: operates in the local traffic pattern or within sight of the tower; is known to be departing for or arriving from flight in local practice areas; or executes simulated instrument approaches or low passes at the airport. All aircraft arrivals and departures other than local (as defined above) are classified as itinerant operations.

TABLE 12  
ITINERANT AIRCRAFT OPERATIONS AT AIRPORTS WITH  
FAA TRAFFIC CONTROL SERVICE  
(Millions)

Fiscal Year	Total	Air Carrier	Air Taxi	General Aviation	Military
<b>Historical*</b>					
1975	37.6	9.4	2.7	24.2	1.3
1976	39.7	9.3	2.9	26.2	1.3
1977	42.4	9.8	3.3	28.1	1.3
1978	43.6	10.1	3.8	28.5	1.2
1979	45.4	10.4	4.4	29.4	1.2
1980	44.3	10.1	4.6	28.3	1.2
1981	42.0	9.5	4.9	26.4	1.2
<b>Forecast</b>					
1982	37.3	8.7	4.9	22.5	1.2
1983	41.3	9.1	5.4	25.6	1.2
1984	45.1	9.5	5.8	28.6	1.2
1985	48.7	9.7	6.1	31.7	1.2
1986	51.8	9.9	6.5	34.2	1.2
1987	54.4	10.1	6.8	36.3	1.2
1988	57.3	10.3	7.2	38.6	1.2
1989	60.2	10.6	7.5	40.9	1.2
1990	63.4	10.9	7.9	43.4	1.2
1991	66.3	11.1	8.2	45.8	1.2
1992	69.3	11.4	8.5	48.2	1.2
1993	72.0	11.7	8.8	50.3	1.2

\*Source: FAA Air Traffic Activity.

Prior to 1977, the fiscal year ended June 30.

Detail may not add to total because of independent rounding.

See Table 11 for definition of itinerant operations.

Air taxi includes commuter.



TABLE 13  
LOCAL AIRCRAFT OPERATIONS AT AIRPORTS  
WITH FAA TRAFFIC CONTROL SERVICE  
(Millions)

Fiscal Year	Total	General Aviation	Military
<b>Historical*</b>			
1975	21.4	20.0	1.4
1976	22.8	21.4	1.4
1977	24.3	22.9	1.4
1978	23.6	22.3	1.3
1979	23.6	22.3	1.3
1980	21.9	20.6	1.3
1981	19.5	18.2	1.3
<b>Forecast</b>			
1982	15.3	14.0	1.3
1983	18.5	17.2	1.3
1984	21.7	20.4	1.3
1985	24.9	23.6	1.3
1986	27.2	25.9	1.3
1987	29.1	27.8	1.3
1988	30.8	29.5	1.3
1989	32.3	31.0	1.3
1990	33.8	32.5	1.3
1991	35.4	34.1	1.3
1992	36.9	35.6	1.3
1993	38.4	37.1	1.3

\*Source: FAA Air Traffic Activity  
Prior to 1977, the fiscal year ended on June 30.  
Detail may not add to total because of independent rounding.  
See Table 11 for definition of local operations.

TABLE 14

INSTRUMENT OPERATIONS AT AIRPORTS WITH  
FAA TRAFFIC CONTROL SERVICE  
(Millions)

Fiscal Year	Total	Air Carrier	Air Taxi	General Aviation	Military
Historical*					
1975	26.1 ( 2.9)	9.5	1.9	10.7	3.9
1976	28.1 ( 6.2)	9.5	2.2	12.8	3.7
1977	31.5 ( 7.4)	10.1	2.6	15.2	3.8
1978	33.5 ( 7.8)	10.4	3.1	16.3	3.7
1979	36.2 ( 8.6)	10.7	3.7	17.9	3.9
1980	38.2 (10.2)	10.6	4.1	19.3	4.1
1981	37.2 ( 9.6)	10.2	4.6	18.5	3.9
Forecast					
1982	34.0 ( 8.5)	9.1	4.6	16.4	3.9
1983	38.8 (11.2)	9.6	5.1	20.2	3.9
1984	41.4 (11.7)	10.2	5.5	21.8	3.9
1985	43.1 (11.7)	10.4	5.9	22.9	3.9
1986	44.8 (12.0)	10.6	6.4	23.9	3.9
1987	46.2 (12.1)	10.7	6.8	24.8	3.9
1988	47.7 (12.2)	11.0	7.2	25.6	3.9
1989	49.1 (12.3)	11.2	7.5	26.5	3.9
1990	50.8 (12.4)	11.5	7.9	27.5	3.9
1991	52.4 (12.6)	11.8	8.2	28.5	3.9
1992	53.8 (12.7)	12.0	8.5	29.4	3.9
1993	55.4 (12.8)	12.3	8.8	30.4	3.9

\*Source: FAA Air Traffic Activity.

Prior to 1977, the fiscal year ended June 30.

An instrument operation is defined as the handling by an FAA terminal traffic control facility of the arrival, departure, or overflight at an airport of an aircraft on an IFR flight plan or the provision of IFR separation to other aircraft by an FAA terminal traffic control facility. Non-IFR instrument counts at Terminal Control Area (TCA) facilities and Stage III of expanded area radar service are included in the totals and noted in parenthesis as an information item (see Table 15).

The data include instrument operations at FAA operated military radar approach control facilities. Air taxi includes commuter. Detail may not add to total because of independent rounding.

TABLE 15

NON-IFR INSTRUMENT OPERATIONS  
(millions)

Fiscal Year	Total	Terminal Control	Expanded Radar Service Area	
		Areas	Stage III	
Historical*				
1975	2.9	-	2.9	
1976	6.2	1.7	4.5	
1977	7.4	2.0	5.4	
1978	7.8	2.1	5.7	
1979	8.6	2.4	6.2	
1980	10.2	2.7	7.6	
1981	9.6	2.4	7.2	
Forecast				
1982	8.5	2.8	5.7	
1983	11.2	3.0	8.2	
1984	11.7	3.2	8.5	
1985	11.7	3.2	8.5	
1986	12.0	3.4	8.6	
1987	12.1	3.5	8.6	
1988	12.2	3.6	8.6	
1989	12.3	3.6	8.7	
1990	12.4	3.7	8.7	
1991	12.6	3.7	8.9	
1992	12.7	3.8	8.9	
1993	12.8	3.9	8.9	

\*Source: FAA Air Traffic Activity.

Prior to 1977, the fiscal year ended June 30.

TCA count not available prior to 1976.

1982-1983 operations reflect the temporary termination of Stage III Service at 34 locations.

TABLE 16

IFR AIRCRAFT HANDLED  
FAA AIR ROUTE TRAFFIC CONTROL CENTERS  
(Millions)

Fiscal Year	Total			Aircraft Handled		
	Aircraft Handled	IFR Departures	Overs	Air Carrier	Air Taxi	General Aviation
<b>Historical*</b>						
1975	23.6	9.3	5.1	12.4	1.3	5.5
1976	23.9	9.4	5.1	12.4	1.4	6.0
1977	26.0	10.2	5.6	13.0	1.6	6.9
1978	28.1	11.0	6.0	13.6	1.9	7.8
1979	29.9	11.6	6.6	14.0	2.3	8.8
1980	30.1	11.7	6.7	13.9	2.6	8.9
1981	29.3	11.4	6.5	12.9	2.9	8.9
<b>Forecast</b>						
1982	27.0	10.5	6.0	11.8	2.9	7.7
1983	28.7	11.2	6.3	12.4	3.1	8.6
1984	30.8	12.0	6.8	13.0	3.4	9.8
1985	32.4	12.7	7.0	13.3	3.8	10.7
1986	33.6	13.2	7.2	13.6	4.0	11.4
1987	34.7	13.7	7.3	13.8	4.2	12.1
1988	36.1	14.3	7.5	14.1	4.4	13.0
1989	37.5	14.9	7.7	14.6	4.6	13.7
1990	38.9	15.5	7.9	14.9	4.8	14.6
1991	40.3	16.1	8.1	15.2	5.0	15.5
1992	41.8	16.7	8.4	15.8	5.2	16.2
1993	43.4	17.4	8.6	16.1	5.6	17.1
1994						4.6

\*Source: FAA Air Traffic Activity.

Prior to 1977, the fiscal year ended June 30.

Detail may not add to total because of independent rounding.

The aircraft handled count consists of the number of IFR departures multiplied by two plus the number of overs. This concept recognizes that for each departure there is a landing. An IFR departure is defined as an original IFR flight plan filed either prior to departure or after becoming airborne. An overflight originates outside the ARTCC area and passes through the area without landing. Air taxi includes commuter.

TABLE 17

IFR DEPARTURES AND OVERS  
FAA AIR ROUTE TRAFFIC CONTROL CENTERS  
(Millions)

Fiscal Year	Air Carrier			Air Taxi			General Aviation			Military		
	IFR Departures	Overs		IFR Departures	Overs		IFR Departures	Overs		IFR Departures	Overs	
<b>Historical*</b>												
1975	4.6	3.1		.6	.1		2.4	.7		1.6	1.2	
1976	4.6	3.2		.7	.1		2.6	.8		1.5	1.1	
1977	4.8	3.4		.8	.1		3.0	.9		1.6	1.2	
1978	5.0	3.6		.9	.1		3.4	1.0		1.7	1.3	
1979	5.0	3.9		1.1	.1		3.8	1.2		1.7	1.4	
1980	4.9	4.0		1.2	.1		3.9	1.2		1.6	1.4	
1981	4.6	3.8		1.4	.1		3.9	1.2		1.6	1.4	
<b>Forecast</b>												
1982	4.2	3.4		1.4	.1		3.3	1.1		1.6	1.4	
1983	4.4	3.6		1.5	.1		3.7	1.2		1.6	1.4	
1984	4.6	3.8		1.6	.2		4.2	1.4		1.6	1.4	
1985	4.7	3.9		1.8	.2		4.6	1.5		1.6	1.4	
1986	4.8	4.0		1.9	.2		4.9	1.6		1.6	1.4	
1987	4.9	4.0		2.0	.2		5.2	1.7		1.6	1.4	
1988	5.0	4.1		2.1	.2		5.6	1.8		1.6	1.4	
1989	5.2	4.2		2.2	.2		5.9	1.9		1.6	1.4	
1990	5.3	4.3		2.3	.2		6.3	2.0		1.6	1.4	
1991	5.4	4.4		2.4	.2		6.7	2.1		1.6	1.4	
1992	5.6	4.6		2.5	.2		7.0	2.2		1.6	1.4	
1993	5.7	4.7		2.7	.2		7.4	2.3		1.6	1.4	

\*Source: FAA Air Traffic Activity.

Prior to 1977, the fiscal year ended June 30.

Air taxi includes commuter.

TABLE 18

**TOTAL FLIGHT SERVICES, PILOT BRIEFS AND FLIGHT PLANS  
ORIGINATED AT FAA FLIGHT SERVICE STATIONS  
AND COMBINED STATION/TOWERS  
(Millions)**

Fiscal Year	Total Flight Services	Pilot Briefs	Flight Plans Originated		
			Total	IFR-DVFR	VFR
<b>Historical*</b>					
1975	58.3	16.2	8.0	5.2	2.8
1976	58.1	16.0	8.1	5.4	2.7
1977	61.3	16.9	8.7	5.9	2.8
1978	64.9	18.3	9.1	6.4	2.7
1979	66.6	18.7	9.5	6.9	2.6
1980	64.3	18.3	9.0	6.6	2.4
1981	62.6	17.7	8.8	6.5	2.3
<b>Forecast</b>					
1982	61.2	17.3	8.2	5.9	2.3
1983	64.2	18.2	8.8	6.4	2.4
1984	67.3	19.1	9.5	7.1	2.4
1985	70.2	20.0	10.1	7.6	2.5
1986	74.0	21.3	10.7	8.2	2.5
1987	78.0	22.7	11.3	8.8	2.5
1988	82.4	24.2	12.0	9.5	2.5
1989	87.2	25.9	12.7	10.2	2.5
1990	92.2	27.6	13.5	11.0	2.5
1991	97.0	29.3	14.2	11.7	2.5
1992	101.8	31.0	14.9	12.4	2.5
1993	106.4	32.6	15.6	13.1	2.5

\*Source: FAA Air Traffic Activity.

Prior to 1977, the fiscal year ended June 30.

Detail may not add to total because of independent rounding.

Total Flight Services is a weighted workload measurement derived by multiplying pilot briefs and flight plans originated by two and adding the number of aircraft contacted. A flight plan may be filed orally or in writing to qualify for inclusion in the activity count. The data forecast in Tables 18 and 19 are based upon the current number of and configuration of the FSS and CS/T. Changes in their number or configuration may necessitate adjustments in the forecasts.

TABLE 19

**AIRCRAFT CONTACTED FAA FLIGHT SERVICE STATIONS  
AND COMBINED STATION/TOWERS  
(Millions)**

Fiscal Year	Total	IFR-DVFR	VFR	Air Carrier	Air Taxi	General Aviation	Military
<b>Historical*</b>							
1975	10.0	1.6	8.4	.4	.7	8.1	.7
1976	9.8	1.5	8.3	.4	.8	8.0	.6
1977	10.2	1.7	8.5	.4	.8	8.4	.6
1978	10.2	1.9	8.3	.4	.8	8.4	.5
1979	10.2	2.0	8.1	.4	.9	8.4	.4
1980	9.6	2.0	7.7	.4	.9	7.9	.4
1981	9.6	2.0	7.6	.4	.9	7.9	.4
<b>Forecast</b>							
1982	10.2	2.4	7.8	.4	.9	8.5	.4
1983	10.2	2.5	7.7	.4	1.0	8.4	.4
1984	10.1	2.5	7.6	.4	1.0	8.3	.4
1985	10.0	2.5	7.5	.4	1.0	8.2	.4
1986	10.0	2.5	7.5	.4	1.0	8.2	.4
1987	10.0	2.5	7.5	.4	1.0	8.2	.4
1988	10.0	2.6	7.4	.4	1.0	8.2	.4
1989	10.0	2.6	7.4	.4	1.0	8.2	.4
1990	10.0	2.6	7.4	.4	1.0	8.2	.4
1991	10.0	2.7	7.3	.4	1.0	8.2	.4
1992	10.0	2.7	7.3	.4	1.0	8.2	.4
1993	10.0	2.8	7.2	.4	1.0	8.2	.4

\*Source: FAA Air Traffic Activity.

Prior to 1977, the fiscal year ended June 30.

Detail may not add to total because of independent rounding.

Aircraft contacted represent a record of the number of aircraft with which FAA facilities (FSS, CS/T) have established radio communications contact. One count is made for each en route, landing or departing aircraft contacted by a facility, regardless of the number of contacts with an individual aircraft. A flight involving contacts with five different facilities, disregarding the number of contacts with each, would be counted as five aircraft contacted.

TABLE 20

ACTIVE PILOTS BY TYPE OF CERTIFICATE  
(Thousands)

As of January 1 Historical*	Total	Students	Private	Commercial	Airline			Glider	Other	Instrument Rated (1)
					Transport	Helicopter				
1975	733.7	180.8	305.8	192.4	41.0	5.6		4.8	3.2	199.3
1976	728.2	177.0	305.9	189.3	42.6	4.9		5.3	3.1	204.0
1977	744.2	188.8	309.0	187.8	45.1	4.8		5.8	3.0	211.4
1978	783.9	203.5	327.4	188.8	50.1	4.8		6.2	3.1	226.3
1979	798.8	204.9	337.6	185.8	55.9	4.9		6.5	3.2	236.3
1980	814.7	210.2	343.3	182.1	63.7	5.2		6.8	3.4	247.1
1981	827.0	199.8	357.5	183.4	69.6	6.0		7.0	3.7	260.5
Forecast										
1982	830.2	192.6	361.3	184.4	74.1	6.6		7.4	3.8	272.9
1983	851.8	200.4	369.7	184.1	78.6	7.1		7.9	4.0	285.3
1984	865.3	201.1	378.2	184.0	82.1	7.5		8.3	4.1	297.5
1985	886.0	207.6	386.7	183.2	87.7	7.8		8.7	4.3	309.5
1986	909.3	217.7	395.1	182.4	92.2	8.2		9.2	4.5	321.6
1987	932.3	227.1	403.6	182.2	96.7	8.5		9.6	4.6	333.6
1988	958.7	238.5	412.1	183.3	101.2	8.8		10.0	4.8	345.6
1989	985.9	249.7	420.5	185.4	105.8	9.1		10.4	5.0	357.6
1990	1,011.8	258.5	428.9	188.7	110.3	9.4		10.8	5.2	369.6
1991	1,039.1	267.7	437.5	192.9	114.8	9.7		11.2	5.3	381.5
1992	1,067.4	277.2	445.9	197.9	119.3	10.0		11.7	5.4	393.5
1993	1,096.8	287.0	454.4	203.2	124.3	10.3		12.0	5.6	405.5

\*Source: FAA Statistical Handbook of Aviation

Detail may not add to total because of rounding.

(1) Should not be added to other categories in deriving total.



TABLE 21

Active U.S. Military Aircraft in  
Continental United States(1)  
1975-1993

Fiscal Year Historical*	Total	Fixed Wing Aircraft			Helicopter
		Jet	Turboprop	Piston	
1975	19,889	9,526	1,298	1,927	7,138
1976	19,775	9,255	1,511	1,360	7,649
1977	18,670	9,168	1,382	1,075	7,045
1978	18,931	8,898	1,794	1,056	7,183
1979	18,526	8,656	1,859	850	7,161
1980	18,969	8,794	1,869	699	7,607
1981E	19,538	9,212	1,987	624	7,715
Forecast					
1982	19,828	9,393	2,020	521	7,894
1983	20,012	9,480	2,090	437	8,005
1984	20,166	9,481	2,120	392	8,173
1985	20,316	9,507	2,140	356	8,313
1986	20,288	9,558	2,193	217	8,320
1987	20,353	9,662	2,199	207	8,285
1988	20,521	9,893	2,187	205	8,236
1989	20,619	10,045	2,189	200	8,185
1990(2)	20,596	10,045	2,189	200	8,162
1991	20,566	10,045	2,189	200	8,132
1992	20,566	10,045	2,189	200	8,132
1993	20,566	10,045	2,189	200	8,132

E - Estimate \*Source: Office of the Secretary of Defense, Department of Defense.

Prior to 1977, the fiscal year ended June 30.

(1) Includes Army, Air Force, Navy and Marine regular service aircraft, as well as Reserve and National Guard aircraft.

(2) Detailed planning information not available beyond 1989. 1990 through 1993 projected at 1989 level.

TABLE 22

Active U.S. Military Aircraft Flying  
Hours in Continental United States(1)  
1975-1993  
(thousands)

Fiscal Year Historical*	Total	Fixed Wing Aircraft			Helicopter
		Jet	Turboprop	Piston	
1975	6,510	3,478	677	902	1,453
1976	5,928	3,109	646	559	1,614
1977	5,401	2,932	577	489	1,403
1978	4,837	2,843	595	328	1,071
1979	5,319	2,960	684	398	1,277
1980	5,255	2,904	796	235	1,320
1981E	5,242	2,987	792	221	1,242
Forecast					
1982	5,223	2,992	824	190	1,217
1983	5,393	3,219	814	176	1,184
1984	5,472	3,313	802	160	1,197
1985	5,555	3,324	897	137	1,197
1986	5,724	3,499	909	91	1,225
1987	5,635	3,448	914	56	1,217
1988	5,664	3,471	914	56	1,223
1989	5,706	3,504	914	56	1,232
1990(2)	5,706	3,504	914	56	1,232
1991	5,706	3,504	914	56	1,232
1992	5,706	3,504	914	56	1,232
1993	5,706	3,504	914	56	1,232

E - Estimate      \*Source: Office of the Secretary of Defense, Department of Defense

Prior to 1977, the fiscal year ended June 30.

(1) Includes Army, Air Force, Navy and Marine regular aircraft, as well as Reserve and National Guard Aircraft.

(2) Detailed planning information not available beyond 1989. 1990 through 1993 projected at 1989 level.

TABLE 23

## ECONOMIC ASSUMPTIONS USED IN FAA FORECASTS

Fiscal Year	Disposable Personal Income (billions 1972\$)	Consumer Price Index (CY 1967=100)	Gross National Product (billions 1972\$)	Implicit GNP Deflator*** (CY 1972=100)	Oil & Gas Deflator (CY 1972=100)
<b>Historical*</b>					
1975	862.5	155.2	1,227.1	125.6	150.9
1976	892.6	166.2	1,272.8	132.1	162.8
1977	928.4	178.7	1,352.6	139.8	172.0
1978	972.3	191.2	1,418.3	150.0	178.3
1979	1,006.6	211.2	1,476.8	162.8	220.7
1980	1,016.4	239.8	1,481.9	177.4	324.8
1981E	1,034.8	266.3	1,507.1	193.6	367.2
<b>Forecast**</b>					
1982	1,062.2	287.5	1,501.5	208.9	375.7
1983	1,100.6	305.7	1,570.9	221.5	383.8
1984	1,142.8	320.1	1,650.5	232.5	404.9
1985	1,189.3	335.5	1,729.9	243.4	428.4
1986	1,237.5	350.9	1,807.6	254.6	452.0
1987	1,281.4	366.8	1,885.2	266.0	476.0
1988	1,319.8	381.5	1,941.8	276.7	499.8
1989	1,359.4	396.7	2,000.0	287.7	524.8
1990	1,400.2	412.6	2,060.0	299.2	551.0
1991	1,442.2	429.1	2,121.8	311.2	578.6
1992	1,485.5	446.2	2,185.5	323.7	607.5
1993	1,530.1	464.1	2,251.0	336.6	637.9

\* Source: Wharton Econometric Forecasting Associates, Inc.

\*\* Source: Executive Office of the President, Office of Management and Budget, January 1982.

\*\*\*Calendar Year

TABLE 24  
BASELINE AIR CARRIER ASSUMPTIONS - DOMESTIC OPERATIONS

Fiscal Year	Revenue Per	Passenger	Average Seats	Average Passenger
	Passenger Mile	Load Factor	Per Aircraft	Trip Length
	Cents**	Percent	Number	Miles
Historical*				
1975	4.8	55.0	126.1	697
1976	4.8	56.2	129.2	705
1977	4.8	56.4	132.8	704
1978	4.4	61.3	135.3	717
1979	4.1	63.0	136.4	719
1980	4.4	58.2	139.7	730
1981E	4.8	57.7	142.9	749
Forecast				
1982	5.0	59.3	153.0	769
1983	5.2	60.5	157.0	773
1984	5.3	61.5	161.0	776
1985	5.3	62.0	164.0	779
1986	5.3	62.5	166.0	782
1987	5.4	63.0	168.0	785
1988	5.4	63.0	170.0	788
1989	5.4	63.0	174.0	791
1990	5.4	63.0	178.0	794
1991	5.5	63.0	182.0	797
1992	5.5	63.0	186.0	800
1993	5.5	63.0	190.0	803

\* Source Civil Aeronautics Board.

\*\* Constant 1967 Dollars

# Glossary of Terms

## **Aerial Application**

Aerial application in agriculture consists of those activities that involve the discharge of materials from aircraft flight and miscellaneous collection of minor related activities that do not require the distribution of any materials.

## **Aircraft Contacted**

Aircraft with which the Flight Service Stations have established radio communications contact. One count is made for each enroute, landing or departing aircraft contacted by Flight Service Station regardless of the number of contacts made with an individual aircraft during the same flight.

## **Aircraft Operation**

An aircraft arrival or departure from an airport with FAA airport traffic control service. There are two types of operations—local and itinerant.

1. Local operations are performed by aircraft which:
  - (a) Operate in the local traffic pattern or within sight of the tower.
  - (b) Are known to be departing for, or arriving from, flight in local practice areas located within a 20-mile radius of the control tower.
  - (c) Execute simulated instrument approaches or low passes at the airport.
2. Itinerant Operations:  
All aircraft arrivals and departures other than local operations.

## **Airport Traffic Control Tower**

A central operations facility in the terminal air traffic control system, consisting of a tower cab structure, including an associated IFR room if radar equipped, using air/ground communications and/or radar, visual signaling and other devices, to provide safe and expeditious movement of terminal air traffic.

## **Air Route Traffic Control Center**

A central operations facility in the air route traffic control system using air/ground communications and radar, primarily providing enroute separation and safe, expeditious movement of aircraft operating under instrument flight rules within the controlled airspace of that center.

## **Air Taxi Operations**

Air taxi operations and commuter air carrier operations (takeoffs and landings) carrying passengers, mail or cargo for revenue in accordance with FAR Part 135 or Part 121.

## **Air Taxi Operators**

Operators of small aircraft "for hire" for specific trips. They operate under CAB Part 298 and FAR 135 which apply to aircraft of 12,500 pounds or less except under special exemption.

## **Air Traffic Hub**

Air traffic hubs are not airports; they are the cities and Standard Metropolitan Statistical Areas requiring aviation services and may include more than one airport. Communities fall into four classes as determined by each community's percentage of the total enplaned passengers.

Large 1.00% (2,071,729 passengers and over in FY 1976)

Medium: 0.25% to 0.99% (between 517,932 and 2,071,728 passengers in FY 1976)

Small: 0.05% to 0.24% (between 103,586 and 517,931 passengers in FY 1976)

Nonhub: Less than 0.05% (under 103,585 passengers in FY 1976)

## **All Cargo Carrier**

One of a class of air carriers holding certificates of public convenience and necessity issued by the CAB, authorizing the performance of scheduled air freight, express, and mail transportation over specified routes, as well as the conduct of nonscheduled operations, which may include passengers.

## **Approach Control Facility**

A terminal air traffic control facility providing approach control service.

## **Available Seat-Miles**

The aircraft miles flown in each flight stage multiplied by the number of seats available on that stage for revenue passenger use.

## **Business Transportation**

Any use of an aircraft not for compensation or hire by an individual for the purpose of transportation required by a business in which he is engaged.

## **Certificated Route Air Carrier**

An air carrier holding a certificate of public convenience and necessity issued by the Civil Aeronautics Board to conduct scheduled services over specified routes. Certain nonscheduled or charter operations may also be conducted by these carriers.

## **Common IFR Room**

A highly automated terminal radar control facility. It provides terminal radar service in an area encompassing more than one major airport which accommodates instrument flight operations.

**Commuter Operator**

Operators of small aircraft of a maximum size of 60 seats who perform at least five scheduled round trips per week between two or more points or carry mail. They operate under CAB Part 298, FAR 135, and at times FAR 121.

**Contract Operator**

An air carrier operating on a private for-hire basis, as distinguished from a public or common air carrier, holding a commercial operator certificate (issued by the FAA under FAR 121) authorizing the carrier to operate aircraft over 12,500 pounds for the transportation of goods or passengers for compensation or hire.

**Domestic Trunk Carriers**

One of a group of certificated route air carriers which operates primarily within and between the 50 states of the United States and the District of Columbia over routes serving primarily the larger communities.

**Executive Transportation**

Any use of an aircraft by a corporation, company or other organization for the purposes of transporting its employees and/or property not for compensation or hire and employing professional pilots for the operation of the aircraft.

**FAA Flight Plan**

Specified information relating to the intended flight of an aircraft that is filed orally or in writing with a flight service station or an air traffic control facility.

**Flight Service Station (FSS)**

Air Traffic Service facilities within the National Airspace System which provides preflight pilot briefing and enroute communications with VFR flights, assist lost IFR/VFR aircraft, assist aircraft having emergencies, relay ATC clearances, originate, classify, and disseminate Notices to Airmen, broadcast aviation weather and NAS information, receive and close flight plans, monitor radio NAVAIDS, notify search and rescue units of missing VFR aircraft, and operate the National weather teletypewriter systems. In addition, at selected locations, FSSs take weather observations, issue airport advisories, administer airmen written examinations, and advise Customs and Immigration of transborder flight.

**Foreign-Flag Air Carrier**

An air carrier other than a U.S. flag air carrier in international air transportation. "Foreign air carrier" is a more inclusive term than "foreign-flag air carrier," presumably including those non-U.S. air carriers operating solely within their own domestic boundaries; but in practice the two terms are used interchangeably.

**General Aviation**

All civil aviation activity except that of certificated route air carriers and air commuter operations. The types of aircraft used in general aviation (GA) activities cover a wide spectrum from corporate multi-engine jet aircraft piloted by professional crews to

amateur-built single-engine piston acrobatic planes, balloons and dirigibles.

**IFR Aircraft Handled**

The number of IFR departures multiplied by two plus the number of IFR overs. This definition assumes that the number of departures (acceptances, extensions, and originations of IFR flight plan) is equal to the number of landings (IFR flight plans closed).

**Industrial/Special Flying**

Any use of an aircraft for specialized work allied with industrial activity, excluding transportation and aerial application. (Examples: pipeline patrol, survey, advertising, photography helicopter hoist, etc.)

**International and Territorial Operations**

Operators of aircraft flying between the 50 States of the United States and foreign points, between the 50 States and U.S. possessions or territories, and between foreign points. Includes both the combination passenger/cargo and the all cargo carriers engaged in international and territorial operations.

**Intrastate Air Carrier**

A carrier licensed by a state to operate wholly within its border but not permitted to carry interline passengers from out of state. They are not regulated by the CAB.

**Instructional Flying**

Any use of an aircraft for the purpose of formal instruction with the flight instructor aboard or with the maneuvers on the particular flight(s) specified by the flight instructor.

**Instrument Operation**

An aircraft operation in accordance with an IFR flight plan or an operation where IFR separation between aircraft is provided by a terminal control facility or air route traffic control center.

**Local Service Carriers**

Certificated domestic route air carriers operating routes of lesser density between the smaller traffic centers and between those centers and principal centers.

**Other Use Flying**

Use of general aviation aircraft for purposes other than those in specific categories, such as business, personal, air taxi.

**Personal and Pleasure Flying**

Any use of an aircraft for personal purposes not associated with a business or profession, and not for hire. This includes maintenance of pilot proficiency.

**Pilot Briefing**

A service provided by the Flight Service Station to assist pilots in flight planning. Briefing items may include weather information, NOTAMS, military activities, flow control information and other items as requested.

**RAPCON**

Radar Approach Control Facility (Air Force).

**RATCF**

Radar Approach Control Facility (Navy).

**Registered Active General Aviation Aircraft**

A civil aircraft registered with the FAA that has been flown one or more hours during the previous calendar year. Excluded are aircraft owned and operated in regularly scheduled, nonscheduled, or charter service by an air carrier certificated by the Civil Aeronautics Board or aircraft in excess of 12,500 pounds maximum gross takeoff weight owned and operated by a commercial operator certified by the FAA to engage in intrastate common carriage.

**Revenue Passenger Enplanements**

The count of the total number of passengers boarding aircraft. This includes both originating and connecting passengers.

**Revenue Passenger Load Factor**

Revenue passenger miles as a percent of available seat miles in revenue passenger services, representing the proportion of aircraft seating capacity that is actually sold and utilized.

**Revenue Passenger Mile**

One revenue passenger transported one mile in revenue service.

**Revenue Ton Mile**

One ton of revenue traffic transported one mile.

**Secondary Airport**

An airport receiving approach control service as a satellite to a primary approach control facility, or one at which control is exercised by the approach control facility under tower enroute control procedures.

**Supplemental Air Carrier**

One of a class of air carriers holding certificates, issued by the CAB, authorizing them to perform passenger and cargo charter services supplementing the scheduled service of the certificated route air carriers. They are sometimes referred to as nonscheduled carriers.

**Total Flight Services**

The sum of flight plans originated and pilot briefs, multiplied by two, plus the number of aircraft contacted.

**U.S. Flag Carrier or American Flag Carrier**

One of a class of air carriers holding a certificate of public convenience and necessity issued by the CAB, approved by the President, authorizing scheduled operations over specified routes between the United States (and/or its territories) and one or more foreign countries.